











PRINCIPLES OF PATHOLOGY,

AND

PRACTICE OF PHYSIC.

BY

JOHN MACKINTOSH, M. D.,

LECTURER ON THE PRACTICE OF PHYSIC IN EDINBURGH,

&c., &c., &c.

20,478

744

VOL. I.

FIRST AMERICAN FROM THE THIRD LONDON EDITION.

WASHINGTON:

STEREOTYPED BY DUFF GREEN, FOR THE REGISTER AND LIBRARY  
OF MEDICAL AND CHIRURGICAL SCIENCE.

1834.

34

WB  
M158e  
1834

## PREFACE TO THIRD EDITION.

---

THE original object of this work was to provide those gentlemen who did the author the honor of attending his lectures, with a Text-Book, in the hope that it might be found useful to them in prosecuting their studies. For some months the sale was confined to his own pupils, and the work was entitled "*Heads of Lectures.*" But the author was subsequently advised to launch the result of his labors before the professional public, with the title changed to that of "*Principles of Pathology, and Practice of Physic,*"—trusting, that with all its faults and imperfections, it would be indulgently received as a humble attempt to establish a pathological system of medicine.—*Preface to first edition.*

The success of this work has far surpassed the author's sanguine expectations; two large editions having been disposed of in the course of four years.

In offering a third edition to the profession, the author, very sensible of the respect due to its members, and of the flattering manner in which the work has been received, has taken every precaution to render it worthy of a continuance of their patronage. It is considerably enlarged,—the import of every paragraph has been well considered, and many errors have been corrected. He was so well aware of the imperfections of the work, that he courted the remarks of several friends, well qualified, by their learning, experience, and ability, to undertake such a task; he has availed himself of their written and oral criticisms, and endeavored to turn them to the best advantage. The author stands particularly indebted, in this respect, to Mr. Marshall, Deputy-Inspector General of Hospitals, famed for a correct acquaintance with the literary, as well as the practical part of medicine; for being an accurate observer, an inductive reasoner, and an admirable critic. If all his suggestions have not been adopted, more particularly as to pursuing an abstract style of writing in this edition, it has not arisen from any want of respect for his opinions, but merely because the author entertains rather different sentiments.

The author wishes his work to be regarded merely as a book of facts, carefully collected and examined:—he lays no claim to be considered more wise, learned, or original than any other professional man in the enjoyment of similar advantages, and who has pursued the same patient method of investigating dis-

ease. He has been very sparing in the introduction of hypothetical discussions, and when he has attempted to explain or establish any point by reasoning, he trusts it will be found for the most part to be strictly inductive.

Whatever feeling may exist as to the manner in which he has treated the opinions of others, the author knows that his efforts are perfectly sincere and well intended. In teaching the principles of a profession which is of such unbounded importance to mankind, he has ever felt himself called upon, by the combined influence of reason and humanity, to deal with professional statements, theories, and practices, with that unreserved authority with which a judge is invested, when addressing a jury in a case of life and death. If it be necessary to exercise such a power, where one life only is at stake, how much more incumbent is it on a medical writer, on whose labors the lives of thousands may depend! The author is not aware that he has ever been guilty of indulging in any expression which he would be afraid to repeat in the presence of the persons whose opinions he has impugned; neither can he be justly accused of bestowing praise from personal friendship, or of condemning from personal animosity. He will never be ashamed or backward to confess an error, and he will feel no reluctance to give up every opinion he has formed, however long and arduous his investigations may have been, for others which may hereafter be proved to be more correct. He most heartily deplores the morbid sensibility and irritability which exist among medical men; no parallel to which can be found in the history of any other liberal profession. Few medical men can bear to know that the soundness of their opinions has been questioned; they regard any such attempt as a signal of deadly personal hatred, and view it in the same light as if their moral character were maliciously assailed. On what circumstances does this frame of mind depend? The author has always attributed it to an overweening conceit, selfishness, and pusillanimity. Some may object to these statements, however true, being put in print, because they may think them calculated to injure the dignity of the profession, and to produce bad feeling. But the author cannot believe in the existence of real dignity and good feeling, where there is such a deplorable want of high-mindedness and moral courage:—besides which, these pages are written exclusively for the professional, and not for the public eye. It cannot be denied, that practitioners in medicine stand too low in the scale of public estimation, and “something is rotten in the state of Denmark.” But the author trusts soon to see an important change in the profession, the first step towards which must be a greater care and discrimination on the part of those who teach the different branches of medicine, in exciting greater industry and zeal among their pupils,



and inducing them, by precept and example, to regard the profession of medicine more as a science, and the blessed means of doing good, than as a corrupt trade. Much substantial good might be effected by examiners for medical diplomas, were they to feel that their own personal honor depended more on the high qualifications and superior mental endowments of the gentlemen admitted into the profession, than on the amount of fees received! No point connected with the medical profession stands so much in need of reform as the last alluded to; and the author is compelled by a sense of duty, to call the attention of Patrons of Universities, and Fellows of all Royal Colleges, and other medical bodies in Great Britain, to the example of disinterestedness on the part of the Royal College of Surgeons of Edinburgh. This is evinced by the liberality of their late regulations, the good effects of which have been already experienced; for, although the qualifications required have been increased, the number of students has not been diminished, and will in all probability be considerably augmented.

EDINBURGH, 31 ALBANY STREET, {  
1st November, 1832. }

NOTE.—The reader will be furnished with a full and complete table of contents at the end of the volume.

# PART I.

---

GENERAL HISTORY OF INFLAMMATION AND FEVERS—WITH THE  
PATHOLOGY AND TREATMENT OF INDIVIDUAL FEVERS.



9

## CHAP. I.

### OF INFLAMMATION.

---

#### HISTORY OF THE GENERAL DOCTRINES, CAUSES, PHENOMENA, AND EFFECTS OF INFLAMMATION.

IN the history of Medical Science, we find that no subject has attracted more attention than that of inflammation; the minds of the most distinguished pathologists having been turned to the investigation with an ardour which has never been surpassed. This is to be attributed to the importance of the subject,—to the frequent occurrence of inflammation,—and to the vast range of diseases which owe their origin to this morbid action. According to many authors, inflammation and fever are thought to be mere modifications of the same pathological state of the system, while others speak of them even as synonymous terms; hence, a successful elucidation of the former, was expected to prove a triumph over the difficulties of the latter.

This interesting subject still continues to command the attention of every new inquirer,—doubtless owing to the mystery in which he finds it involved; for it must be confessed, that, notwithstanding the indefatigable labors of John Hunter and others, it does not appear that any very strong light has been thrown on the true pathology of inflammation, while it could easily be proved that much obscurity has been produced by confounding cause and effect, and by regarding some of the phenomena as principal parts of the essence of inflammation. A great mistake has also been committed, by medical inquirers following out an erroneous method of investigating diseases, forming false analogies, and attributing to inflammation of internal organs, all the phenomena and characters of those situated on the surface of the body,—thus drawing too largely from surgical pathology. But it may be stated, that the most deadly inflammation of important organs, may proceed to a fatal termination, some with few, others with none more of the symptoms hitherto universally attributed to inflammation.

In giving a history of the doctrines which have prevailed, it would be a waste of time to quote the opinions maintained previous to the time of Boerhaave, because they were inconsistent with the knowledge we now possess of the circulation of the blood. Boerhaave insisted that inflammation is produced by an obstruction to the free circulation in the capillary vessels. Obstruction, he conceived, might be occasioned by too profuse a flow of any of the excretions, and by heat, or the application of any other cause which dissipated the thinner parts of the blood, thereby producing viscosity. When this thickened

state of the blood did not exist before the production of inflammation, he imagined that the larger globules of the blood found their way by some accident into the capillaries, and produced obstruction. But when the perspiration, the flow of urine, or any of the other excretions were suppressed, then he supposed the capillaries became so much distended, as to allow the thicker parts of the blood to enter, creating a more permanent obstruction; and this state he termed an *error loci*. Thus, it will be seen, that Boerhaave had two causes of inflammation,—viscosity of the blood, and an *error loci*, either of which he supposed capable of producing an obstruction in the circulation of a part, giving rise to increased action in the heart and other vessels, and exciting a flow of blood in the direction where the obstruction existed. He, however, felt the necessity of having the assistance of some other cause, to enable him to account more satisfactorily for the morbid terminations which occasionally happen, and therefore brought into play the humoral pathology, by stating that there is sometimes an acrimonious state of the fluids, which tends to produce gangrene. That part of his doctrine relating to viscosity, cannot support the phenomena, the viscosity being more likely to produce a general than a local effect, since the whole mass of blood must be supposed to be in the same state. But there is rather more probability in the *error loci*; for it is a fact, that in inflamed parts, red blood enters into vessels, which, in a state of health, circulate only a colourless fluid. But here there is some difficulty in determining whether or not the *error loci* is an effect, and not a cause of inflammation; and the difficulty is increased, when we reflect, that vessels frequently circulate red particles, which usually contain a colorless fluid, and yet inflammation has neither preceded, attended, nor followed this remarkable change. On looking at the history of medical opinions on this subject, we shall observe, that, as the humoral pathology declined, Boerhaave's doctrine began also to lose ground, although the phenomena of inflammation were, in many cases, ingeniously explained by their assistance; and it must be confessed that we have abandoned this doctrine, which is far more ancient than the time of Boerhaave, without sufficient consideration.

Stahl and Hoffman attempted to improve Boerhaave's doctrines, by bringing into account the influence of the nervous system on the capillary vessels in inflammation. On this occasion, little need be said respecting the views of these celebrated men, as it will be necessary to resume the subject in a subsequent part of the work. But it may be noticed, that it has always appeared to me a strong proof of the close connection between the state termed fever, and that of inflammation, that almost every individual laborer in this field of investigation has adduced the same, or nearly the same doctrines, to explain both. Hence the pretty general belief as to their identity. But it will soon be my duty to offer some reasons for dissenting from this too sweeping pathology.

This slight notice of the opinions of Boerhaave, Stahl, and Hoffman, is sufficient to enable me to connect their views with those of modern date. The doctrines which Cullen taught were founded upon those of the last three physi-



cians. He admitted the obstruction so much insisted on by Boerhaave, but denied that it was produced either by *error loci*, or lentor of the blood. He also took advantage of the hint which had been given by Stahl and Hoffman, respecting the influence of the nerves, and insisted that the obstruction was produced by "spasm of the extreme arteries supporting an increased action in the course of them." Cullen maintained this doctrine even in those cases in which external inflammations are occasioned by the application of boiling water, blisters, and other stimuli.

The only observation it appears necessary to make, after giving this slight sketch, is, that all these illustrious physicians have been guilty of confounding cause and effect. When we place a ligature upon a large vessel, we do not find that general inflammation of the limb follows as a matter of course, which nevertheless ought to happen if mere obstruction were the cause of inflammation. This obvious objection has not escaped authors; and it has also been remarked by the acute mind of Allan Burns, that the effusion from the capillaries into the cellular membrane, which takes place so frequently as the effect of inflammation, cannot be explained if the doctrine of spasm be admitted. Besides, Cullen has been guilty of a logical blunder, in attributing the proximate cause of inflammation to spasm of the capillaries, when, according to his own shewing, the spasm is occasioned by an accumulation of blood in these vessels.

According to John Hunter, inflammation is to be considered only as a distracted state of parts, which requires another mode of action to restore them to a state of health; or, in other words, that inflammation is a healthy action, which follows an injury of some tissue or organ. In another place, he states that active inflammation is to be considered as an increased action of the vessels, which consists simply, in the first instance, in a distension beyond their natural size. This he supposes to depend on the elasticity of the vessel, and a weakness of its muscular power. The whole of this he considers as a law of nature; and he seems to have believed, that the blood vessels possess within themselves an innate active power of dilatation.

This leads me to state, that two modern opinions on this subject divide the profession. According to the one, inflammation depends upon increased action of the capillaries of the part. According to the other, it is produced by debility or weakened action of the same vessels, and increased action of the trunks. On each side of this intricate and difficult question, are ranged the names of very eminent men; but, as will be shown in the sequel, they might have spared themselves a great deal of trouble. Both parties found their opinions upon microscopical experiments, performed on the web of the frog's foot. Each observed the same phenomena, but they have drawn different conclusions. Dr. Thomson, for instance, applied salt to a frog's foot; the first effect was to increase the velocity of the circulation, and to make the vessels larger to the naked eye, and of a brighter red color. After the stimulant had been continued some time longer, the red globules became "less distinct than before the application of the salt, and obviously less distinct *from the rapidity of their motion.*"

Dr. Wilson Philip performed experiments prior to Dr. Thomson, on the frog's foot; and having first proved that he could create increased action in the capillaries without exciting inflammation, happened to meet with one unfortunate frog, who had already by some means contracted inflammation; and he found, upon applying the microscope, the vessels greatly dilated, and the motion of the blood extremely languid;—and he says, “It was at once evident, on observing the part through the microscope, that where the inflammation was greatest the vessels were most distended, and the motion of the blood was slowest.”

Dr. Wilson Philip wetted the web of the frog's foot with *distilled spirits*, but although he continued to keep it moist for ten minutes, or a quarter of an hour, he could not perceive the slightest symptoms of inflammation. “The vessels, instead of appearing redder and more turgid, were evidently *paler* and *smaller* than before the application of the spirits.” No wonder. Distilled spirits is the most deceitful application he could have used for such an experiment. In the first place, it might stimulate the circulation in the part, but its quick evaporation would *necessarily* produce coldness, which, no doubt, caused *contraction* of the vessels, and rendered them *paler* and *smaller*.

Dr. Hastings has subsequently repeated these experiments corroborating those of the last named author. In all the experiments, whether performed by Thomson, Wilson Philip, or Hastings, the velocity of the blood is represented to have been increased in the capillaries, in the state of simple excitement; but it constantly happened, when inflammation commenced, that no globules could be seen in the blood of the affected vessels. Now, whether are we to join Dr. Thomson, in concluding that they cannot be seen because of the “*rapidity of their motion*,” or Dr. Hastings and others, who state that the blood in an inflamed part becomes itself morbidly changed, so that no globules can be detected? The point in dispute is thus brought within a very small space, and the reader is left to form his own opinions. The result of my investigations on the subject shall now be detailed; and it may be stated, that this has not been done hurriedly, but after considerable experience, and a very careful review of all that has been written on inflammation.

It appears to me, that the view taken by Mr. Syme, in an Essay on Inflammation,\* is the most philosophical. He thinks that too much attention has been directed to the obvious signs of inflammation, viz. redness, heat, swelling, and pain, and too little bestowed on the *altered functions of the part*. Mr. Syme justly thinks, that “if this remarkable character of inflammation had been kept in mind, pathologists would hardly have spent so much labour in disputing about contraction and dilatation of the vessels, since it is obvious, that mere difference of capacity, though it might, to a certain extent, account for the redness and swelling, could never enable us to explain the alteration of function, any more than a knowledge of the size of capillary vessels could instruct us as to the mode in which their secretions, &c. are performed during health.” And he maintains, that “redness and swelling ought to be secondary considerations

\*Published in Edinburgh Medical and Surgical Journal, vol. 30, p. 316.

in the investigation of the inflammatory state, in comparison with the grand distinguishing character of *altered function*."

Three points seem to have been much overlooked by writers on inflammation. 1st. The influence of the nervous system; 2dly. The changes in the qualities of the blood itself; and, 3dly. The disordered functions of the capillaries. I have performed experiments upon horses, which prove most satisfactorily the influence which the nerves have, even in chronic inflammation. It is well known that these animals are very liable to inflammation in the foot, from different causes; and I have seen horses who had been lame for months, cured by dividing the nerves immediately above the fetlock joint, the effect being sometimes instantaneous, and occasionally permanent. With regard to the second point, there can be no doubt that the blood in the part affected becomes diseased; the red particles cease to be observed, and the blood assumes a flocculent appearance, becoming darker and darker, and the vessels become in some degree obstructed. It is not improbable that this change on the blood may be found to depend partly, if not principally, upon the cessation of nutrition and exhalation, and at the same time a stop being put to the conversion of arterial into venous blood.

It has been long known, that increased action of the vessels does not constitute inflammation, as we see every day illustrated in the act of blushing, and by the employment of friction to any part on the surface of the body. In these instances, the vascularity soon subsides on the removal of the causes. But we can produce actual inflammation by a continuance of the friction; the blood will accumulate, and we shall have all the phenomena, and the usual effects of slight superficial inflammations. It may be produced also by obstructing the flow of blood in the limb for a sufficient length of time, by applying a ligature, and this is what actually happens in a case of strangulated hernia.

Diminished action of the vessels may be produced and maintained for some considerable time, and the effect will perhaps be, not inflammation of the part itself, but of another part of the body at a distance. Again, if inflammation has been excited in an organ, an increased flow of blood takes place towards it, and all other parts must consequently suffer from a diminished supply of arterial blood; this increases the embarrassment in all organs, hence the general constitutional disturbance. In the practice of physic, this last circumstance is too frequently overlooked. Physicians are apt to expect a cessation of the constitutional symptoms the moment the original disease is subdued; this not being the case, they often push their remedies far beyond the proper point, and make matters worse. This is perhaps more peculiarly a British error, and we are justly condemned for it by our continental brethren. Other physicians, again, do very great mischief by stimulating and throwing in bark and other tonics too soon after convalescence has commenced,—they will be found in the morning ordering a large bleeding, and in the evening a stimulant. Cases no doubt occur in which a more immediate change may be necessary; all that is wished to be impressed upon the reader in this part of the work, is, that such practice is



too often had recourse to, more from an unfounded *dread* of the occurrence of "typhoid symptoms," than from real necessity; and that sufficient confidence is not placed in the powers of the constitution to repair injuries which have been sustained. Physicians are too often found tampering with the human frame, as if it resembled a piece of machinery of their own construction.

The essence of inflammation, partly consists in more blood entering by the arteries than can escape by the veins, or than can be made use of, as when the part is in a state of health, when its functions are actively performed; the consequence is an accumulation of blood, or congestion and effusion from partial obstruction; and it is, I imagine, this degree of obstruction which produces the throbbing. The vessels of the inflamed part are greatly dilated, and the number which contains red blood is greatly increased.

It must be confessed, that in inflammation there is much undiscovered. Physiologists have to settle several disputed points in the doctrines of the circulation; and anatomists have to discover a great deal regarding the anatomy and physiology of the nervous system, before pathologists can be expected to advance their part of the science of medicine in any remarkable degree.

Considerable difference of opinion still exists among physiologists whether the circulation of the blood in the capillaries depends entirely upon the *vis a tergo* it receives from the heart, or whether these vessels have an impulsive power independently of the heart's action. Those who examine this subject without preconceived notions, and with no other view than to discover truth, cannot reject the *vis a tergo* which the whole column of blood is regularly receiving from the heart. Neither can they reject the action which the vessels possess from their elasticity, in aiding other parts of the machinery, not to mention their power of contracting themselves even into much smaller diameter than is natural to them, when circumstances require it for the preservation of life. With respect to the first point, it will be observed, that if one of the smallest arteries of the body, and at the greatest possible distance from the heart, be divided, the blood will be perceived to flow *per saltum*. As to the second, if the extreme vessels are quiescent, not possessing any power of acting within themselves, and depending entirely upon the action of the heart, how could irregular determinations of blood take place? When any internal organ is inflamed, we are taught, by experience and observation, to apply blisters and other irritants to the surface of the body, as a part of the remedial process. These applications excite a temporary inflammation on the surface, sometimes to the complete relief of the internal disease. This translation, as it may be called, is not affected through the agency of the heart, by contractions of which the blood is propelled into the vessels generally; it can, in all probability, have no power to send blood to one part, in preference to another.

The results of Mr. Syme's experiments lead me to suspect that some notable errors or oversights have been committed by Hunter and other experimenters upon the circulation. In the essay above alluded to, Mr. Syme, in endeavoring to refute the received notions respecting the circulation in the capillaries,

makes the following statements:—"In this case, also, we ought to discover, through the microscope, not only a change in the capacity of the capillaries, but an oscillatory movement of the globules passing through them. Instead of this, we see the capillaries apparently quite rigid and immoveable, while the globules shoot through them in such a free, unconstrained manner, as to convince every observer that they are not impelled by a *vis a tergo*." The results of one of Mr. Syme's experiments are worthy of being quoted in his own words.—"I have repeatedly seen the globules continue in motion through the capillaries of a frog forty minutes after the whole heart was excised. And this motion was not uniform,—either as to direction or velocity, in which case the gradual contraction of the vessels might have been supposed adequate to account for it,—but sometimes this way, sometimes that,—at one time quick, at another slow,—and always continuing quickest as well as longest in the smallest vessels. While in health the motion of the blood is slowest in the capillaries."

Having been an eye-witness to these experiments, I can add my testimony as to their correctness, and that every precaution was taken by Mr. Syme to guard against the possibility of any fallacy.

Before concluding this subject, I beg to enter my protest against the employment of the term "debility," as too generally applied to the capillary vessels of an inflamed part. If a man were able to walk three miles in an hour with an ordinary burden on his shoulders, it surely would not be correct to say he is in a state of debility because he could not go over as much ground if he had to carry an additional hundred weight. This is exactly the condition of the blood-vessels; they are well able to perform their natural functions, but when over-loaded, they are rendered incapable.

### *Causes of Inflammation.*

In stating the causes of inflammation, it is my intention to avoid adverting to occult causes. In medical investigations, it is very injurious to the science to affect being over-wise, and it is surely more philosophical to confess our ignorance, than to attempt, by special pleading, to leap over difficulties, which, in the present state of our knowledge, are insurmountable. Instead of descanting at great length upon proximate, remote, exciting, and predisposing causes, it will be better to speak of common and specific causes of inflammation. The disease itself is improperly termed by Cullen and others, the "proximate cause;" this term will, for a considerable time to come, be fostered by symptomatical physicians, who call the symptoms the disease, and the disease the proximate cause; but there is no reason why it should be retained in this work, unless it were employed to denote the proximate cause of the *symptoms*. As to predisposing causes, it is more consistent to take them into consideration when treating of prevention of diseases; but many writers have been guilty of great absurdities even with regard to their influence in the production of disease. One author, with whose writings most medical men are well acquainted,

in treating of the predisposing causes of hooping-cough, mentions, among others, "a serous temperament,—a scrofulous constitution,—dentition,—a disposition to contract catarrhal affections,—the retrocession of eruptive diseases."

The common causes in the production of internal inflammation are, exposure to cold; sudden vicissitudes of weather, particularly when the air is damp; irregularity of bowels; unwholesome diet; insufficient clothing; cold drinks, particularly when the body is warm; depressing passions, &c. Almost all these causes tend to produce inflammation in the same manner, by inducing irregular distributions of the blood and venous congestion. The lost balance of the circulation is marked sufficiently well in the beginning of almost all acute diseases, by the accession of rigors, coldness, and paleness of the surface of the body. Some individuals are more liable to inflammatory attacks than others, and some to inflammation of a particular tissue or organ. Such persons may well be said to be liable to or susceptible of such disease, there can therefore be no objection to the term in this limited sense.

Few persons escape inflammatory affections produced by specific causes. The contagion of small-pox is termed a specific cause, because nothing is capable of producing the disease but its own contagion, in whatever way it is communicated. Measles is produced by a specific cause. Scarlatina also, and *perhaps* hooping-cough. Erysipelas is not to be ranked with these specific diseases, because it is not produced by a specific cause, as is too generally imagined. If erysipelas were produced twenty times, by inserting matter taken from an erysipelatous surface, expressly for the sake of experiment, still it cannot be ranked as a specific disease, because it has also followed an injury produced by a splinter of wood, a perfectly clean sewing needle, a rusty nail, &c. It has also occurred after a prick received in dissection. No one ever alleged that small-pox, measles, or scarlatina, were ever produced in this fortuitous manner. It may be also mentioned that there are other matters, the nature of which is unknown, but the effects of which are capable of producing inflammatory affections, viz., malaria, sometimes denominated marsh miasm, and human effluvia, together with another and still more mysterious agent, epidemic influence. But it appears to me, the great agent in the production of inflammatory affections is the sudden application of cold to the surface of the body, particularly when the stomach and bowels are out of order, and the mind depressed. Cold wet feet, for example, will sometimes produce determination to the head, and phrenitis will be the consequence; or to the lungs, producing pneumonic inflammation, &c. Dr. Thomson states that this cannot be explained upon any principle. The doctrine of determination of blood explains it so far, and in my humble opinion quite far enough for all practical purposes. It is not, however, actual, but relative cold, which is so prejudicial to the human body; it is exposure to cold when the body has been previously much heated.

An individual, after sudden exposure to a cold damp atmosphere, may be attacked by inflammation of the lining membrane of the air passages. It becomes



an interesting and important question to determine upon what part of the human frame the cold air acts. Dr. Thomson says, at page 57 of his work on inflammation: "In some instances cold, or a diminution of temperature, seems to act more directly upon the parts with which it comes in contact. We have proof of this in the inflammation of the mucous membrane of the nose, fauces, trachea, and bronchiæ, from the inhalation of cold air." This is a most unhappy illustration. It is apparently a matter of little consequence how cold the air is which passes into the lungs, provided the body be sufficiently protected by warm clothing. In cold regions, if Dr. Thomson's hypothesis were true, an individual ought never to be free from bronchitis. We are assured, however, that the sailors in the voyages of discovery, which were made by Captain Parry, to the North Pole, enjoyed remarkably good health.

There is another curious point which must be noticed. Extreme cold produces exactly the same sensations and the same effects upon the living animal fibre as intense heat. Take a piece of frozen mercury in the hand, and it will cause a sensation similar to that produced by hot iron,—inflammation and vesication follow; and if applied long enough, destruction of the part will take place. The hot iron destroys vitality by the addition of too much caloric; the frozen metal by abstracting it too suddenly.

#### *Division of inflammation into varieties.*

Inflammation has been variously divided and subdivided. The terms acute, sub-acute, and chronic, will be employed in the course of this work, as being sufficiently precise, and well understood. It is wished to avoid the use of the term "passive," because it is employed too vaguely, sometimes to express the existence of sub-acute inflammation, at others that of the chronic kind. John Hunter also instituted the terms healthy and unhealthy. Is inflammation a disease? If it be, it is certainly not proper to call it healthy. Other varieties of inflammation have been mentioned, as scrofulous, gouty, rheumatic, erythematic, erysipelatous, &c.; but it is my belief, that as pathology improves, these terms will be less frequently employed. Another obvious division of inflammation depends upon the tissue or organ affected.

#### *Phenomena of Inflammation.*

External inflammation is characterized by redness, swelling, heat, and pain. All these taken together, leave no doubt as to the existence of inflammation. In this respect, surgeons have the advantage of physicians. They can see and feel the part affected, in addition to the power of judging from the constitutional symptoms, and the account the patient gives of his own sensations. Whereas in physic we have greater difficulties to encounter in forming a diagnosis. We observe local and constitutional symptoms also; but it does not always follow, because there are dyspnœa and fever, that the lungs are inflamed; the disease may be inflammation of the pericardium. There may be violent vomiting, tenderness in the epigastrium, thirst, with more or less fever, while the disease is

in the head. There may be severe local and constitutional disturbance, without the existence of the slightest degree of inflammation, merely from a neuralgic affection of some tissue or organ, or from impeded function of some viscus. During life we cannot see the state of internal organs, to ascertain whether they are red and swollen; and a sensation of heat, pain, and fever, may exist without the least inflammatory action. It will be proved, in a subsequent part of this work, that the pulse cannot be depended on. With respect to buffy blood,\* it may exist without actual inflammation; and, in inflammatory complaints, the blood does not always yield it. The shape of the dish modifies this appearance, so does the manner in which the blood flows from the vein. Mental agitation and fatigue produce the buffy coat. Sometimes it does not appear on the blood till the patient has been largely and repeatedly bled. I am inclined to place considerable dependence, however, on the buffy coat, *taken in connection with other circumstances*, particularly when the surface is also concave, or "cupped," as it has been termed, and when the quantity of serum is proportionably large.

It has often occurred to me to see dissections where great destruction of vital organs had taken place from inflammation, and yet there had been little or no pain complained of during life. Nay, I have seen instances of inflammation of the pleura to such a degree as to occasion death, where the symptoms were too slight to direct the medical attendants to the true seat of the disease.

I feel convinced that no pathological physician will join Dr. Gregory, a modern writer on the practice of physic, in the following curious dogmas: "*Delirium marks inflammation of the brain; impatience of light, ophthalmia; hoarseness, inflammation of the larynx; and dyspnoea, that of the lungs.*" The practice of physic would indeed be simple and certain, were these things true. But this is not the proper place to enter upon a refutation of such arbitrary assumptions. The uncertainty of the pulse has been already mentioned. Inflammation may be going on towards a fatal termination, in an important organ, without any febrile movement. This was noticed long ago by Morgagni, Valsalva, and others, and it led them too hastily to conclude, that mortification of internal organs occasionally took place without the previous existence of inflammatory action.

What occasions the redness, swelling, heat, and pain, in external inflammations? The *redness* is occasioned, no doubt, by the enlarged size of the vessels, and the increased quantity of blood in the part affected. Vessels which formerly transmitted a lymphic fluid, now circulate red blood.

The *swelling* has been erroneously ascribed to the expanded state of the blood from increased heat; but it has been proved, that the blood contained in the vessels of an inflamed part, is not one degree hotter than that which flows from

\* Blood is said to be "buffy," when the surface, instead of being of a reddish color, presents a yellowish crust of greater or less thickness. There are various opinions as to the cause of this appearance. Some attribute it to the slower coagulation of the blood; others to an increased quantity of fibrine; or merely to the hurried state of the circulation. Of one fact I am quite certain, from repeated observations, that blood may be seen to be buffed while it is yet flowing from a vein, and before the stream has reached the cup.

the heart; besides, a few degrees of caloric could have no effect in producing the swelling. It seems to be owing to the increased quantity of blood in the part, and the effusion of a lymph fluid into the surrounding cellular substance,—the action of the absorbents being at the same time, in all probability, interrupted.

*Heat.*—Boerhaave and others imagined, that this symptom depended on the friction of the red globules against the sides of the vessels; and that, in inflamed parts, the friction is greatly increased by the obstruction which exists. This, like all Boerhaave's doctrines, is too mechanical. It is difficult to determine on what cause the increased heat depends, and, fortunately for humanity, it is not of much consequence; but it is probably in part owing to a peculiar action in the nerves of the texture, partly to the increased volume of blood, by which the *quantity* of caloric is augmented, although it be not indicated by the thermometer, but perhaps principally to diminution or suppression of the natural functions of the part.

*Pain.*—Pain in an inflamed part is not in general continued, it is most acute during the systole of the left ventricle of the heart. It would seem, that the state of the blood influences the sensibility of the body in disease; if the mucous membrane of the bronchial tubes be extensively inflamed, the circulating blood will be principally venous, in which case little complaint is made of pain.

#### *Terminations of Inflammation.*

Inflammation, (says John Hunter,) *cæteris paribus*, always proceeds more favorably in strong than in weak constitutions; for, when there is much strength, there is little irritability. In weak constitutions, the operations of inflammation are backward, notwithstanding the part in which it is seated may possess, comparatively speaking, considerable vascular activity.

This observation, like many others by the same author, however true with regard to surgical pathology, cannot be made to apply so universally in the practice of physic. We more frequently see acute diseases of internal organs, gallop through a rapid course to a fatal termination, in robust, than in delicate individuals. Persons with delicate constitutions, frequently sink, while laboring under internal inflammations, not because the diseased action has any peculiar tendency to terminate badly, but because the patients are too weak to bear the necessary remedies.

In another place Mr. Hunter remarks:—"It has been supposed that different species or varieties of inflammation arise from the difference of the nature of the part inflamed; but this is certainly not the case; for if it were, we should soon be made acquainted with all the different inflammations in the same person at the same time, and even in the same wound; for instance, in an amputation of a leg, &c. It is the adhesive in them all, if the parts are brought together; it is the suppurative, if the parts are exposed." This observation, no doubt, in some measure holds true in surgery; but it cannot be admitted in physic, as it is well known that inflammation terminates differently in different organs and tissues.

The terminations of external inflammation are commonly styled "resolution; suppuration; ulceration; and gangrene." The first is, of course the most de-



sirable; and fortunately for mankind, it is the most frequent. It is evinced by a diminution of pain and swelling—the fever gradually abates, pus does not form, nor does the structure of the part suffer permanent injury.

The second termination is that termed suppuration. After the inflammation has existed for a certain time, which varies much in different persons, pus begins to be secreted in the cellular substance, and either collects in one cavity, as in common phlegmon, or is diffused very generally over a whole limb, as in phlegmonous erysipelas.

Ulceration is the third termination mentioned.

The most dreaded termination, and fortunately the rarest, is the entire death of the parts affected, which are then said to be mortified or sphacelated. This condition is recognized by the sudden cessation of pain; the part, from being of a bright red color, assumes a dusky hue; it crepitates from the extravasation of air in the cellular substance, vesications arise, a very peculiar odour is perceived, the pulse sinks, and every appearance announces speedy dissolution. Death, however, does not always follow mortification of external parts, the dead are sometimes separated from the living parts; and are ultimately thrown off, the patient surviving the injury.

It is now necessary to mention shortly the effects of inflammation in the following textures: 1. Skin. 2. Mucous membranes. 3. Cellular membranes. 4. Fibrous membranes. 5. Seros membranes. 6. Of inflammation of the solid viscera and glandular system.

#### 1. Inflammation of the skin.

The effects of inflammation on this part of the body are very various: such as the formation of rashes, as in scarlatina, roseola, &c.; pustules, as in small-pox, porrigo, &c.; vesicles, as in chicken-pox, herpes, &c.; papulæ, as in measles, lichen, &c.; scales, as in lepra; ulceration with loss of substance; and also gangrene.

2. The effects of inflammation on mucous membranes, are, swelling and dryness; effusion of mucus or of matter of a puriform character—a mixture of the two, appropriately termed muco-purulent; of a serous fluid, and coagulable lymph. These different products of inflammation are sometimes colorless at others yellow, and sometimes red like currant jelly. The mucous membranes are likewise liable to softening, thickening, passive hæmorrhage, ulceration, contraction, sloughing, and tubercular formation.

Some of these effects are common to the mucous lining of the air passages, alimentary canal, and urinary passages, as for instance, copious exudation of mucus, softening, thickening, and passive hæmorrhage. Others are not so; tubercular formation, for instance, is more frequently met with in the alimentary canal. Ulceration is sometimes found in the air tubes, but more frequently in the stomach and bowels, particularly the latter, rarely in the bladder. Some parts of the mucous membrane of the same canal are more liable to inflammation and ulceration than others; for instance, the terminations of the ilium and colon. Inflammation is more liable to terminate in the exudation

of coagulable lymph in some parts than others; it is seen most frequently in the wind-pipe and rectum, although other parts are not altogether exempt.

Considerable vascularity is not alone a certain proof of inflammation having existed in the mucous membranes before death, because it may be found only in depending parts of the canal; and congestions of this membrane may be occasioned by diseases of the heart and lungs, and by any other cause which obstructs the circulation of the blood.

3. Inflammation of the cellular membrane terminates in effusion of lymph, of serum, of pus, in induration, and gangrene. Inflammation in this tissue is generally termed phlegmonous, and although the cellular membrane is so extensive and loose in its texture, the disease tends to circumscribe itself, and the effused matter to make its way to the surface of the body. Occasionally, though rarely, the inflammation has a tendency, from the first, to spread very extensively, from peculiar circumstances which have never been satisfactorily explained. To express this condition, several new-fashioned names have been invented; the one most applicable, is "diffuse cellular inflammation." Sometimes the death of a small portion of the cellular membrane takes place, then the affection is called carbuncle.

4. Inflammation of fibrous membranes. This is the tissue which is generally supposed to be affected in gout and rheumatism; the chief peculiarities are said to be, that it never terminates in suppuration, ulceration, or gangrene, and the functions of the brain are rarely disturbed during the course of the disease. It is said to terminate sometimes by effusions of a gelatinous matter, or depositions of calcareous matter. This subject ought to be held as being open to future investigation; it is by no means proved that the inflammation which attends gout or rheumatism is situated in such a texture; it looks to me more as if it were seated in the extremities of nerves. All the phenomena and the terminations of these diseases, tend to confirm this suspicion, more particularly when we reflect upon the sudden metastases. At all events, it is rather strange that so many authors should make the assertion, that inflammation of fibrous membranes *never* terminates in suppuration and ulceration. What do they call the periosteum? But this question is too intricate and extensive, and too surgical, to be investigated in this work.

5. Serous membranes in a state of health show few red vessels, and their surfaces exhale a thin serous fluid, which is just sufficient to bedew them. When inflamed red vessels are seen during life, an effusion takes place either of serum or lymph, or of both. Sometimes the effusion is limpid, or turbid like whey: at other times it looks like pus, and occasionally it is greenish, or resembles lees of wine; often large masses of coagulable lymph are discovered glueing the parts together. Adhesions between the different viscera of the thorax and of the abdomen seem to be affected by means of intervening portions of lymph, which subsequently become organised. The quantity of the effused matter is sometimes small, amounting only to a few ounces, at others there are several pounds. It has occurred to me to see ten, twelve, and even twenty pounds in one side of the chest.

A bloody effusion is sometimes found, more particularly in the abdomen. Echymosis not unfrequently takes place when the inflammatory action is very violent. There can be no doubt that tubercles form *occasionally* under a sub-acute and chronic inflammation of this class of membranes, more particularly in the peritoneum, pleura *pulmonalis*,\* and arachnoid coat. Emphysema also occurs in the cellular tissue immediately under the peritoneum. It has been proved by experiments, that the peritoneum, however vascular under acute inflammation, during life, loses its red appearance even during the act of death. In chronic inflammation, it is sometimes found very red in color, and thickened in texture.

A great deal has been written during the last few years upon inflammation of the arachnoid, by which science has certainly been benefited; but it appears to me that considerable misconception has taken place upon this subject. Although red vessels are rarely to be seen in the arachnoid, so rarely that in my whole life two instances only have presented themselves, yet no one who has paid attention to the situation of effusions of matter in the skull, will deny the existence of inflammation in that tissue. But I apprehend it is comparatively rare. In my examinations (and they have not been few in number) to ascertain this point, it has not occurred to me above six times to find effusion external to the arachnoid membrane. If on examining the abdomen, we were to find no vascularity, and no adhesions, or effusions of serum or lymph, within the cavity of the peritoneum, but were to discover the effusion on the other side of the membrane, extravasated for instance in the cellular tissue which connects this serous membrane to adjacent parts, should we be entitled to say, from any thing we yet know, that this was a consequence of peritonitis? In the cases to which I refer, the effusion is between the arachnoid and the pia mater, which are united by fine cellular substance—the *wrong side*, if it proceeded from diseased action in the former membrane, unless it has two serous surfaces, which has not been maintained by any anatomist. There is not, perhaps, in the whole body, a more vascular membrane than the pia mater, and I cannot avoid concluding that the effusions, not only on the surface of the brain, but also in the ventricles, depend more on diseased action in this membrane than the other.

Ulceration is also to be considered as an occasional, although rare, effect of inflammation in serous membranes. It has presented itself to me three or four times only. There are two splendid specimens of this change in my museum one of ulceration of the pleura *pulmonalis* and *costalis*, the other, of the membranes on the surface of one of the hemispheres of the brain.

Gangrene is one of the rarest results of inflammation of serous membranes, and it is to be doubted whether it ever occurs when the diseased action is confined to this tissue.

6. Inflammation of the solid viscera and glandular system. The first circumstance generally perceived is the presence of an unusual quantity of blood

\* Tubercles are rarely seen in the pleura *costalis*.



in the affected organ. The first change in the structure of the viscus is softening. Hardening is owing, in general, to chronic inflammation. With respect to inflammation of the solid viscera, it is to be remarked, that if the liver be excepted, the termination in the formation of abscess is rare. In the lungs, it is admitted by the best authorities to be rare; I have seen it once only in the substance of the lungs. In the brain, it is probable that the peculiar change which has been denominated *ramollissement*, and the remains of old apopietic effusions, together with tubercular degenerations, have been often mistaken for abscesses.

Tubercles are found in the substance of various organs, as in the liver, spleen, kidneys, lungs, and brain; and there can be no doubt these are sometimes the result of inflammatory action, but no one is warranted in asserting that they are invariably so produced. I have frequently found in the lungs, and in the substance of the brain, depositions of a tubercular character, which were certainly not caused by inflammation, and which, in all probability, had been in existence for years without exciting inflammation. This statement refers to persons who were either killed by accident, who died suddenly without any previous complaint, or who were carried off by other diseases. One of the finest preparations in my collection, is the heart of a woman, extensively and deeply tuberculated, who died in a moment without a previous complaint, and no other lesion could be discovered.

Lastly, Inflammation affecting glands has an aptitude to terminate speedily in suppuration. Sometimes, however, they suppurate very slowly, and occasionally induration takes place.

From this rapid sketch it may be thought that the subject has not attracted a sufficient share of my attention, and that several points have been altogether overlooked; such as the marked difference in the constitutional symptoms in inflammations affecting different tissues; and the general principles of treatment. The truth is, that the importance of these points is felt too deeply to allow me to treat of them in a general description,—a description, moreover, which ought necessarily to be very short. These subjects will be fully entered into in subsequent parts of the work.

## CHAP. II.

### ON FEVER.

---

#### HISTORY OF THE GENERAL DOCTRINES OF FEVER.

THE importance of the subjects which are to be discussed in this chapter is very great, from the frequent occurrence and often fatal termination of this class of disorders; and it will appear still more so, when we reflect on the vast extent of our dominions abroad, where, it is believed, febrile diseases carry off four-fifths of those who die.

If a person, after shivering, feels hot, restless, and thirsty, has a quick pulse and complains of languor, he is said to have a fever.

Galen's notion of fever appears to have been, that an extreme degree of heat is formed in the heart, and from thence extends itself to the rest of the body. It is one of the oldest notions of medicine, that fevers are produced by a concoction of something pernicious to the system, which is expelled by a critical effort of nature, as, for instance, by frequent and copious evacuations from the bowels, free perspiration, &c. This is the view of fever taken by the humoral pathologists.

According to Boerhaave, fevers arise from the same pathological causes as inflammations,—thus ascribing them to viscidities of the blood, *error loci*, and an acrimonious states of the fluids. He conceived that the cold stage of fever was produced by the *error loci*, and all that followed was to be regarded as natural consequences. As has been mentioned in treating of inflammation, the first idea which appears to have been given to the world of the influence of the nervous system in the production of fever, originated with Stahl, and it was improved upon by his colleague, Hoffman. They supposed that fever consisted in a tonic spasm, produced on the extremities of the nerves by a deficiency of action in the brain. They also adopted the humoral pathology; but insisted, that the sanative process was impeded by the spasm at the extremities of the nerves, thereby preventing the disease from being thrown off; and it appears to have been their opinion, that it was this resistance which produced the constitutional commotion which attends fevers.

According to Cullen, the human body is composed of certain organs, whose actions are regulated according to laws peculiar to animal life, and superintended by a mobile and conservative energy which is situated in the brain, acting wisely but necessarily for the general health, preventing mischief and repairing injuries, by a pre-established relation between the changes produced,

and the motions required for the restoration of health, which actions are performed by the nerves. According to him, the muscular filaments are merely the extremities of nerves. He supposed that fever is produced by a collapse or diminution of the energy of the brain, in consequence of the influence of contagion, miasm, cold and fear acting as sedatives. This diminished energy produces an universal debility, and causes a spasm of the extreme vessels, and in this spasm the cold fit is supposed to consist. In fact, that fever is nothing more than diminished energy of the brain, and spasm of the capillaries. He conceived that the debility proves a stimulus to the circulating system, exciting increased action of the heart and arteries, which continues till it restores the energy of the brain; by removing the cause of the spasm of the extreme vessels, relaxation takes place, and health is restored by a copious sweat, or discharge of some of the other excretions. He divided the whole phenomena into three stages; first, the stage of diminished energy of the brain, and consequent debility; secondly, that of spasm of the extreme vessels; and, thirdly, all that follows till the commencement of the sweating stage. Perceiving his doctrines to be exceedingly weak, Cullen sought support from certain powers which are supposed to be inherent in the constitution, which enable it to resist and throw off disease, commonly called the *vis medicatrix naturæ*. But it is important that he should here speak for himself. "Upon the whole, our doctrine of fever is explicitly this:—The remote causes, are certain sedative powers applied to the nervous system, which, diminishing the energy of the brain, thereby produce a debility in the whole of the functions, and particularly in the action of the extreme vessels. Such, however, is, at the same time, the nature of the animal economy, that this debility proves an indirect stimulus to the sanguiferous system; whence, by the intervention of the cold stage and spasm connected with it, the action of the heart and large arteries is increased, and continues so, till it has had the effect of restoring the energy of the brain, of extending this energy to the extreme vessels, of restoring their action, and thereby especially *overcoming the spasm* affecting them; upon the removal of which, the excretion of sweat, and other marks of the relaxation of excretories, take place. This doctrine will, as I suppose, serve to explain, not only the nature of fever in general, but also the various cases of it which occur."

It is remarkable that Cullen, who has insisted with so much pertinacity on spasm of the extreme vessels being a principal part of fever, should so completely have forgotten himself, as to assert that atony, which is the very reverse of spasm, is also a principal circumstance in the pathology of fever. But he shall again speak for himself. "From the whole we have now said on the subject, I think it is sufficiently probable, that the symptoms of anorexia, nausea, and vomiting, depend upon, and are a proof of, an *atony* subsisting in the extreme vessels on the surface of the body, and that this *atony*, therefore, now ascertained as a matter of fact, may be considered as a principal circumstance in the proximate cause of fever." "This atony we suppose to depend upon a diminution of the energy of the brain; and that this takes place in fevers we

conclude, not only from the debility prevailing in so many functions of the body mentioned above, but particularly from symptoms which are peculiar to the brain itself."

The meaning of "spasm of the extreme vessels," is morbid contraction; that of atony of the extreme vessels, is a defect of muscular contraction. Can a morbid contraction, and a morbid relaxation, co-exist in the same vessels at the same time? This contradiction appears to me to be quite unparalleled,—it always surprised and disappointed me in the investigation of this subject; and it is astonishing that doctrines founded upon such statements should still be maintained. In the present improved state of pathology it is almost unnecessary to enter into proof, for the purpose of shewing the error of attributing to spasm of the extreme vessels any part of the pathology of fever; but it may be mentioned that, in some fevers, copious perspiration takes place through their whole course; and, even in the cold stage of intermittent, the surface is occasionally covered with moisture.\*

It appears to me, that Cullen and others have confounded debility of actual weakness, with oppression from obstructed action. The debility which depends upon obstructed action is very different from that produced by starvation, a protracted disease, or great loss of blood, &c.; it is mere oppression, occasioned by the loss of balance between the arterial and venous systems: and the proof consists in the well known fact, that upon the restoration of that balance, the overpowering sensations of weakness vanish, even when brought by blood-letting, which is a remedy directly debilitating. If debility formed such a regular and indispensable part of fever, three circumstances ought to follow as necessary consequences. 1st. Weakness, produced in so many different ways, should invariably excite fever. 2d. Once a fever is lighted up in the system, it ought to be impossible to extinguish it, and particularly by any antiphlogistic means; and 3dly. The longer such an action continues, the greater will be the debility, and therefore the febrile symptoms ought to become more and more intractable.

The term "diminished energy of the brain," being a principal part of the foundation of Cullen's doctrines, cannot be allowed to pass without notice. It is one of those vague terms too often used by him to express a great deal more than we actually know, but which in reality explains nothing. It is one of those expressions which satisfies the youthful mind without affording instruction or exciting inquiry. What is the natural energy of the brain? how is it propagated? It would also be very satisfactory if the living advocates of this system would inform us at what period of the disease the energy of the brain exists in its most perfect state, and greatest strength. Is it at the period of attack, or at its termination? It appears to me to be most unphilosophical to treat of diminished energy of the brain as a principal part of any disease, because it has no precise meaning. It can be of no use in explaining the nature and seat of fever, and of still less service in directing the plan of treatment.

\* I have written more fully upon this subject, in a paper in the *Medico-Chirurgical Review* for January, 1828.



Cullen rejected the humoral pathology, and seems to have almost entirely disregarded the effects produced by outward causes, and inward irritations, in producing irregular determinations of blood, which, I shall hereafter attempt to shew, are the great agents in exciting diseases, and especially fevers. It may be noticed in this place, that Dr. Mason Good, in his late large and laborious work, advocates the truth of the chief parts of the Cullenian doctrines.

According to Dr. Brown, man is made of organized materials, endowed with a principle of excitability or predisposition to excitement, by means of a great variety of stimuli, some of which are constantly acting upon the machine. This excitability, in point of fact, is nothing more than the nervous energy of Dr. Cullen; it is the principle of life, or life itself. It is, according to Dr. Brown, constantly varying in its accumulation and exhaustion; yet it differs somewhat from the nervous energy of Dr. Cullen, which is influenced by something unconnected with the matter of organization, and which he terms "*vis medicatrix naturæ*,"—whereas Brown's excitability is passively exposed to the effects of such stimuli as it may chance to meet with, and yields to their influence. He divided all diseases into two classes: the first, caused by accumulated excitability, and marked by direct debility; to this class he gave the name of *sthenic*. The second, produced by exhausted excitability, and marked by indirect debility; this class he termed *asthenic*. And his treatment is as simple as the arrangement, viz. in the first case, to reduce the excitability by antiphlogistic means; and in the second, to increase the excitability by an opposite treatment. It can scarcely be believed that an author who acquired so much reputation, could have been guilty of publishing such nonsense on a point of such vital importance, as the following:—"In order both to prevent and cure diseases, we must always use the indication proposed, and stimulate or debilitate; never wait or trust to the supposed powers of nature, which have no real existence."—*Elements of Physic*, vol. 1, p. 81. It is surprising, considering that his works abound with absurdities equally glaring, that Dr. Brown should have made any converts; and it is not very creditable to the age in which he lived, that it should be told he had numerous followers,—but they soon began to fall off; and it is curious, that in proportion as they declined in number at home, they increased abroad, and are at this very moment, with some modifications, in considerable force in Italy.

Dr. Darwin improved the Brunonian doctrines, in so far as he makes the brain the common fountain from which every other organ is supplied with sensorial fluid. He regards the sensorial fluid as a mere secretion, capable of being exhausted in four different ways, through the agency of four separate faculties which he ascribes to it.

1st. The faculty of *irritability*, exhausted by external stimuli, affecting simple irritable fibres.

2d. Of *sensibility*, exhausted by stimuli affecting the fibres of the organs of sense.

3d. Of *voluntarity*, exhausted by stimuli affecting the fibres of those organs which act in obedience to the will.

4th, and lastly, of *associability*, exhausted by stimuli affecting organs associated in their actions by sympathy or long habit.

By each of these means, Darwin supposes the sensorial power becomes evacuated, as by food and rest it becomes replenished, often indeed with an accumulation or surplus stock of power. He therefore considers the occasional causes of fever, (whatever they may be,) as inducing a torpor of the extreme arteries, and the subsequent heat, as an inordinate action of the sensorial power hereby accumulated to excess.

This subject might be pursued much farther, but a more minute detail does not consist with the plan of this work, particularly as the individuals whose names have been mentioned have bewildered themselves with theories, have substituted mere conjectures for facts to which they have given appellations, have replaced one mystery by adding another quite as inexplicable, and seem to have considered the subject without reference to morbid dissection, or to the habits and modes of living in different societies and climates. I still have to mention the doctrines of more modern pathologists, which are alleged to be founded on morbid dissection. Some of these contend that fever (or as they term it, the proximate cause of fever) depends upon inflammation of a particular organ. Thus it has been attributed to inflammation of the brain—of the liver—of the digestive organs generally—of the mucous membrane of the stomach and intestines particularly—and of the arteries and veins.

It is necessary to caution young practitioners, and more particularly those commencing the study of medicine, against implicitly receiving the arbitrary doctrines of fever which divide the profession in the present day, viz. that fever is invariably produced by inflammation of one viscus, or set of viscera.

Dr. Clutterbuck, a physician of reputation in London, has most ingeniously attempted to prove, that fever depends upon some degree of inflammation of the brain. In reviewing the merits of his system, it must be kept in view, that he practises in the greatest commercial city in the universe, among a people whose minds, generally speaking, are more actively employed than their bodies, who are exposed to intense anxieties, occasioned by extensive speculations and reverses of fortune, who are either in a state of considerable mental excitement or depression. If to these considerations we add the effects of heavy meals and sedentary habits, impeding the functions of the stomach and bowels, it will be seen, that there may be considerable foundation for the opinions this gentleman has been led to advance. But I object to the arbitrary application of his doctrines.

Broussais, to whom the profession also stands greatly indebted, and whose merits, like those of many others, have been more justly estimated abroad than at home, asserts that all fevers may be referred to gastro-enteritis, simple or complicated. In France it is no wonder that Broussais should so frequently find the mucous membrane of the stomach and intestines altered both in appearance and structure, if the habits and modes of living of the people are recollected. The stewed meats, salads, oils, and sweets, consumed by Frenchmen

among the higher ranks, together with the hard beer and acid wines which they drink, and the unwholesome food eaten by the lower ranks, all tend to produce irritation in the digestive organs. Sooner or later, these irritating matters produce increased vascularity, which must frequently terminate in inflammation and ulceration. It is easy, therefore to account for the doctrines of Broussais, and for the tone in which he supports them ; and while I allow him every merit and commendation which is so justly his due, I cannot help objecting to the arbitrary manner in which he wishes to apply them.

I have yet to mention, that there are many individuals of the present day who assert that fevers have never any connexion with inflammation, except in as much as they occasionally excite it in their progress ; and in alluding to the appearances so frequently found on dissection, they triumphantly but erroneously allege, that such appearances are the effect, and not the cause of the disease. Change of structure is certainly only a consequence of previous disordered action, but in fever it is not difficult to trace the progress of the local disease, from the beginning of the disordered action till the structure of the part is injured. But I cannot dwell upon this point in this part of the work, as I shall have to allude to it more fully hereafter. I shall, however, take the liberty to observe, that there are many persons who cannot imagine that inflammation can exist in any organ or tissue of the body in any degree without a strong and a quick pulse, thirst, restlessness, and considerable pain. Fatal error !

The war of opinion in France, respecting the pathology of fever, is at present too great to entitle us to expect candor from all the combatants. Much talent is already in the field, and when the stage of excitement is over, the science of medicine will probably be found to have gained very considerably. Some are ready to assert the universal truth of the *new doctrines* at the point of the sword, while others as strenuously, and apparently as sincerely, deny them. New advocates are daily coming forward on each side ; and while we may express our admiration of the zeal, ability, and assiduity, displayed by so many individuals, still I cannot avoid stating my conviction, that their services would be more useful to suffering humanity, if many of the authors thought more, and wrote less. From this reflection, I would beg to exclude the truly valuable works of Broussias, Andral, Laennec, Boisseau, Bailly, and many others ; but even with respect to these, if that of M. Bailly is excepted, it is melancholy to reflect upon the little practical benefit they have themselves derived from pathological investigations. They have filled large volumes with cases and dissections, but their practice is too *expectant* on most occasions, and generally weak and vacillating. Having already expressed myself candidly respecting the views of authors of our own country, I may be permitted to do the same with respect to those of the French school ; and I must further add an expression of surprise at the little acquaintance with British medical literature, which even their best writers display. Frequent opportunities will occur, in the course of this work, to quote with benefit to my readers, many important facts from French works, but in this doctrinal history, it would be of little service in general, and occasionally would make "darkness visible."



It is now time that I should state the views which I have been led to form on this important subject.

First. Fevers may depend on inflammation of an acute, but more frequently of a sub-acute nature, of some organ or tissue of the body. If the inflammation be acute, the febrile symptoms will be correspondingly high; but if sub-acute, they will assume a slighter form.

Secondly. Fevers very often depend upon mere functional derangement of some organ, having as yet no connexion with inflammation.

Thirdly. Fevers sometimes depend on the mere loss of balance in the circulation, producing local congestions; fevers arising from these last two causes are generally called *idiopathic*.

After having watched the progress and termination of fevers in various climates, I have been led to conclude, that the nature and seat of fever, (which may be called its essence,) is pretty much the same in all constitutions, in all climates, and under all circumstances; the leading difference being in intensity, and the rapidity with which some run through their course.

Some have supposed, from the tenor of the papers which have been published by me, that I deny the influence of the nervous system in the production of fever; but this is far from being the case. It would as soon occur to me to question the laws of gravitation. I have always maintained the strict connexion between the vascular and nervous systems, in producing and keeping up febrile and inflammatory diseases.

There can scarcely be a doubt, that a disordered state of the functions of the brain, and other parts of the nervous system, occasionally gives rise to febrile action. It is impossible to deny to the brain, as an organ, that it may be disordered, like other viscera, in function, as well as diseased in structure. My ideas of fever may be summed up in the words of Dr. Fordyce, one of the best and most original writers upon the subject. "A fever," says he, "is a disease that affects the whole system; it affects the head, the trunk of the body, and the extremities; it affects the circulation, the absorption, and the nervous system; it affects the skin, the muscular fibres, and the membranes; it affects the body, and affects likewise the mind. It is, therefore, a disease of the whole system in every kind of sense. *It does not, however, affect the various parts of the system uniformly and equally; but, on the contrary, sometimes one part is much affected in proportion to the affection of another part.*"—Dissertation on Simple Fever, Part I. p. 27.

It appears to me, that certain general views closely touching this question are admitted by all writers whose opinions are of any value, although the same facts have been called by different names, and have led observers to draw opposite conclusions.

1st. That the functions of almost all organs are embarrassed in fever from the very beginning, and often for days before the sense of cold is felt by the affected person.

2dly. That the blood leaves the surface of the body, and accumulates in internal organs, and that, unless they are overwhelmed, the system makes an ef-



fort to relieve herself, and certain combined phenomena take place, which are designated by the terms "re-action, fever." A question has arisen to determine by what means this is effected. There can be no doubt that it is owing to the principles of life. There are two circumstances, in following which investigators have bewildered themselves; one is, the vain attempt to ascertain the first link in the chain of diseased action; the other is, the still more hopeless endeavour to discover the principle of life, which perhaps no man will ever be able to unravel.

3dly. That inflammation of all parts of the body will give rise to fever.

4thly. That inflammation may supervene during fever, without being the primary cause of the febrile commotion.

5thly. That the nervous system is involved as well as the vascular; and

6thly. It follows as a consequence, if all these things be true, that the blood itself must be in a diseased condition.

This outline of my opinions must suffice at present,—it will be best filled up when treating of the pathology of individual fevers,—when an attempt will be made to account for the discrepant histories which have been given of fevers, and for the varieties of treatment recommended by different authors.

### *Division of Fevers.*

Fevers have been divided into various kinds. Dr. Mason Good has four orders, thirteen genera, and each genus has several species. This is a very erroneous plan in writing as well as teaching; for every individual case has some peculiarity, so that this very learned author might with as much propriety have made many millions of species.

It was the opinion of the celebrated Dr. Rush, that it is "not more improper to say that men are of different species, because some are tall, and others short, or because some are long, and others short-lived, than that fevers are of different species, because they vary in their symptoms and duration.

Cullen has divided fevers into intermittent, remittent, and continued, and this last is sub-divided into synocha, typhus, and synochus.

It is my intention to reject the term "*idiopathic*,"\* as applied to fevers, which I consider a most unhappy term, being one respecting which no medical man with whom I am acquainted can give a satisfactory definition; it seems to be a disease beyond the pale of pathology, having neither nature nor seat. It is defined by some to be a fever without a cause. Fever is alleged to be a certain combination of symptoms, but it cannot be said that this is the disease. The symptoms are to be regarded as evidences of a diseased condition of some part or parts of the system; whereas, those who speak of idiopathic fever, will be found very frequently to do so, either from habit, or from a dislike to change terms, they themselves having a particular meaning for it. But the schoolmen who are in the habit of using this term, I verily believe, do so from

\* The fevers said to be "*idiopathic*" are "intermittent, continued, and exanthematous."

an erroneous impression that the symptoms are the disease, and it is understood that some of them even go the absurd length of treating of idiopathic hectic!

The terms adynamic and ataxic have been also avoided in this work, because there seems to be no good practical reason for their employment.

None of the arrangements which have been hitherto laid before the profession, exactly meet my views; and in so far as I have been able to observe the phenomena of fever, I believe they may be advantageously arranged under the following heads:

1st. Intermittent fever.

2d. Remittent or yellow fever: infantile remittent.

3d. Continued fever, sub-divided into four orders, viz.

Fever from functional derangement.

—— from inflammation.

—— from congestion.

A mixed form of fever between these three last, but in which congestion predominates, commonly denominated typhus or synochus.

4th. Hectic fever.

5th. Fevers attended with eruptions, subdivided as follows:

Scarlet fever.

Measles.

Small pox.

—— modified.

Chicken pox.

Miliary fever.

Roseola.

Urticaria.

6th. The Plague.

#### *General description of the phenomena of Fevers.*

The following are Cullen's definitions of febrile diseases, and of fever:

First, of Pyrexia.

"After shivering, succeed a quick pulse, increased heat, with interruption and disorder of several functions, diminution of strength, particularly of the joints."

Secondly, of Fever.

"After languor, lassitude, and other signs of debility, pyrexia, without any primary local affection."

There are the strongest objections to all medical definitions. The following may be urged against the two above quoted; they are symptomatical definitions, and it is well known by physicians of experience that the symptoms vary much according to constitution, climate, and habits of living. They vary even in different individuals belonging to the same family, and during the same epidemic. The symptoms develop themselves also in various degrees; one symptom, when exceedingly severe, frequently conceals or disguises the others. A definition, to be useful either to the student or the young practitioner, should embrace such phenomena as are peculiar to that particular disease, and which

never attend any other,—phenomena which may be therefore said to be pathognomonic of the affection. As has been already stated, there is no case of fever, or indeed of any other disease, which has not some peculiarity that distinguishes it from another; in truth, the symptoms of diseases have a very wide range of character. A definition, giving a sketch, not of the symptoms, but of the *nature and seat of the disease*, would be a most useful introduction to the practice of physic; but pathology, unfortunately, is not yet sufficiently advanced to enable me to adopt such a plan in the course of this work.

It may be asked why Cullen, in his definition of fever, has taken no notice of pain in the head and in the loins, delirium, and coma, of oppression at the præcordia, of nausea, want of appetite, thirst, and the state of the tongue? The reason appears to me to be evident; the mention of these phenomena would have led to the suspicion of *local affection*, which was contrary to his own dogmas.

“Fever,” says Dr. Fordyce, “of all other diseases, is that one in which a pathognomonic symptom is least to be depended upon; that is to say, an appearance which does not take place when there is no fever, or a fever does not take place when there is no such appearance.”\*

Febrile diseases sometimes commence without any rigor, and go through their whole course without any unusual heat of skin, quickness of pulse, or thirst. The rigor is not always followed by increased heat. Languor, lassitude, and other signs of debility, are symptoms common to almost all diseases, and therefore should not be ascribed to fevers in particular.

It is impossible to give a good general account of the phenomena of fevers, because, in addition to the objections urged above, they vary every day in the course of the disease. The symptoms which appear in the accession of fever, differ from those which manifest themselves in its progress; and these again from those which are observed in the decline and termination. These differences have given rise to a division of every fever into stages:

1. That of accession.
2. ——— increase.
3. ——— declension.
4. ——— collapse.

These stages have been differently named; the first is sometimes called the stage of oppression and depression; the second, that of re-action; the symptoms occurring in the third and fourth stages have too frequently been called typhoid.

The symptoms vary also according to the organs chiefly affected. In some cases there are decided cerebral symptoms, from the very beginning, indicated by headache, intolerance of light and sound, *tinnitus aurium*, and delirium, or stupor with low muttering delirium, and sometimes coma. In other cases the viscera of the thorax are principally affected, indicated by dyspnœa, cough, expectoration, and tightness in the chest. In a third set of cases, some of the viscera of the abdomen are implicated, announced by nausea or vomiting, un-

easiness increased on pressure, obstinate constipation or diarrhœa, a morbid state of the alvine evacuations, discovered both by their appearance and odour; a tympanitic state of the abdomen, and the peculiar appearances of the tongue. Occasionally in the course of the fever there are evidences of acute or sub-acute action in all the three great cavities, and this is what occurs in the worst forms of yellow and malignant fevers.

In fever the functions of every organ are more or less disturbed, so that there is the best proof of universal disorder, and the appearances so frequently seen on dissection warrant this inference. True it is that we now and then, on examining the body of an individual, find no decided morbid appearance.\* This is by no means peculiar to the practice of physic; for, in that of surgery, people sometimes die after capital operations, where there has been no loss of blood, and no organic lesion found upon dissection, to explain the cause of death. They are said to die from the shock, by which term I understand that the principal functions of the body become suddenly impeded to such a degree that life can no longer be carried on. In the same way, in fevers, individuals die before any alteration of structure has taken place; from peculiarity of constitution, they cannot stand the shock produced by the embarrassment of so many organs in the performance of their functions; and farther, many individuals cannot bear the remedies which have been thought necessary for the subduction of the disease.

Some cases of fever commence with shivering, quickly followed by increase of heat and other symptoms of pyrexia, and terminate in a few hours, after considerable suffering, by copious perspiration; this is the simplest form of fever, and is termed *ephemeral*; but when there is a regular succession of paroxysms, it is called *intermittent*.

Other cases commence in the same manner, followed by heat of skin, &c.; continue for a day or two, when the symptoms decline; and there is sometimes a state of complete *apyrexia*, which continues only for a short time, when they recur with perhaps increased violence; this kind of fever has obtained the name of *remittent*. When it occurs in infancy and childhood, it is called "*infantile remittent*." When the skin becomes yellow, the term *yellow fever* has been applied.

Another kind of fever goes on for days, or weeks, without intermission, and is therefore called a *continued fever*. It has several varieties, of which the following are brief sketches.

*First variety*.—An individual feels his appetite impaired, his bowels out of order; his urine perhaps scanty and high colored; he passes restless nights, and at length is sensible of increased heat of skin; towards morning he generally falls into a gentle perspiration, and enjoys a few hours sleep, from which

\* This is seldom the case however. The only places in which the physical traces of disease can be investigated with due care and deliberation, are public hospitals, and the indifference which generally prevails is shameful. If a physician has the ability, he is too much occupied, and some, unfortunately for science, have neither the ability nor inclination.



he rises somewhat refreshed ; he finds his tongue loaded, his breath more or less fœtid ; he feels unwell, but still is able to pursue his ordinary affairs. In the course of the day he is sensible of frequent slight chills, and flushes of heat ; he becomes rather languid, has a little headache, but hopes to be better after dinner ; he returns home, and although he has no appetite, forces himself to eat and drink, and passes rather a worse night. This goes on for several days, till at last he shivers pretty severely, and feels so much oppressed that he is compelled to confine himself to bed. Then for the first time medical advice is sought ; the physician can find no symptom which can be attributed to inflammation ; there is considerable restlessness, but no great degree of suffering ; except that which proceeds from a sense of oppression in the præcordial region, fulness in the stomach and bowels, and pain in the loins ; the appetite is gone, and the individual loathes food of all kinds, but has considerable thirst. The mental faculties are commonly quite sound, but there is perhaps slight alienation during the night.

Abstinence from solid food, and a steady perseverance in gentle laxative medicines, soon produce an amendment. This is the form which I have denominated “ Fever from functional derangement.”

*Second variety.*—A person is sometimes seized with a shivering more or less severe, followed by severe pain in the head, chest, or abdomen ; accompanied by considerable heat, thirst, full pulse, and every symptom which announces a sub-acute attack of some structure, within one or other of the three great cavities ; and this is the form all writers term a pure inflammatory fever. But when the inflammation of any part runs high, it is then said to be an inflammation of a particular tissue or organ. It must be recollected, however, that inflammation of internal organs may go on to a fatal termination without strongly marked symptoms.

*Third variety.*—Another individual, without being sensible of any previous complaint, may be suddenly seized with shivering ; the sense of coldness soon becomes intolerable ; he is unable to support himself in a standing or even in a sitting posture ; his intellectual faculties are soon observed to be impaired, his features shrink, a deadly coldness gradually spreads over the whole surface of the body, his pulse sinks, he makes little complaint, and dies without the appearance of any of the symptoms usually termed febrile. This is a form of disease which is certainly not very frequently met with in this country, but which is often seen in warm climates, and it occasionally attacks women in child-bed. This is the purest example which can be given of what has been termed congestive fever,\* but it is not that form of it which we most frequently meet with in these latitudes, where it generally develops itself in the following manner :—A person, after feeling more or less unwell for some days, or perhaps for some weeks, experiences chilly sensations, alternating with un-

\* This is the form of fever which occurs in Rome and other places where intermittents prevail, and is termed *fièvres intermittentes pernicieuses*, the pathological elucidation of which has been so fully pointed out by M. Bailly.

usual warmth ; he is disposed to sit over the fire ; feels weak, and after being in this situation for some time longer with changes from heat to cold, the cold predominates to his sensation, while another person will pronounce him to be hot ; but upon careful examination, his extremities, more particularly the hands and feet, will be found cold ; he makes little complaint, and is often thought to be asleep, when in fact he is comatose. Occasionally, however, the head is quite free, he suffers from slight dyspnœa, is unable to take a full inspiration, but has no pain. The tongue is generally moist, sometimes loaded, white and shrunk. The pulse is soft, sometimes quick, at others not above the natural standard. Even when to all appearance he is in a complete state of coma, he can be roused, when his expression of countenance will be vacant, and appear as if he were in a state of intoxication. If questioned as to what he complains of, he will answer, "of nothing," or he will move his hand towards his head, or place it on his breast signifying some uneasiness, but he quickly falls into a comatose state again.

*Fourth variety.*—The next form of fever of which it is my duty to give a sketch, is that in which the patient is seized much in the same way as in the last described variety. He complains, however, from the first of pain in his head, chest or abdomen ; has frequent attacks of chilliness followed by heat ; with symptoms characteristic of diseased action in the head, thorax, or abdomen. But this state is quickly succeeded by more or less insensibility, slight delirium, rapid weak pulse ; the surface of the trunk of the body feels hot, while the extremities are rather cold ; the delirium which manifested itself only during the night, now becomes permanent ; it is not of the furious kind, but that which is appropriately termed "low muttering delirium ;" the tongue, which was moist for the first few days, is now observed to be dry and glazed ; he passes his urine and feces in bed ; is always found upon his back, and, however often he may be moved, will soon shrink down again towards the foot of the bed, which is a sign of complete prostration of strength, and perfect helplessness, a bad symptom in any disease. In this state it is impossible to rouse the patient, and it may be evident that he is also blind ; the pulse being quick, and so weak as scarcely to be felt, while the action of the heart may yet be very strong, and a considerable pulsation felt in the carotids, or abdominal aorta. Recovery is rare when the symptoms are so very severe, although the fatal period may be protracted to the end of the third week.

Occasionally in this form of disease, instead of the cold predominating, there is considerable heat, and the symptoms are pretty sharp, but at the termination of a few days they become such as have been described above.

This is the disease generally called typhus. But when the symptoms run very high at first, and subsequently become low, then it is usually called synchus. And this is precisely the form of disease which will be more particularly described hereafter, under the denomination of "*a mixed form of fever*," for want of a better appellation. The term typhus is objectionable, because it is sometimes used to denote a malignant, or a putrid fever ; at others it is em-

ployed to signify a nervous fever. The term synochus is also objectionable, for this reason, that it is stated to be of an inflammatory nature, but there is a supposed union with a typhoid state of the system, which although present remains latent in the first stages, and subsequently develops itself; and we are told that the appropriate remedies for inflammation are not to be employed, from a dread of typhus, which must inevitably follow.

The term hectic fever is used only to signify febrile symptoms consequent to some previous disease, and restricted to symptoms which are produced by the formation of pus in some organ or tissue; in fact, whatever doubts have been entertained with respect to the nature of all other fevers, this is almost the only one which is universally allowed to be symptomatic.

It is considered unnecessary to offer any general explanation in this part of the work respecting the fifth class, viz. Fevers attended with eruptions; or the sixth, the Plague.

### *Causes of Fever.*

The causes of fever are marsh miasm, contagion from human effluvia, and epidemic influence. These causes, together with cold, fear, &c. are called in medical language remote; but I shall continue to employ the terms common and specific. Cullen resolves all remote causes into sedative, in order to support his dogma of debility; he could not consistently allow a cause of a stimulating and exciting nature. Marsh miasm, he supposes capable of producing intermittents and remittents only, and he restricts the term contagion to human effluvia, capable of producing continued fevers only. He considers the common causes scarcely capable of producing fevers. Some authors assert that there is only one species of infectious matter peculiar to all febrile diseases.

No one who has attended to this subject, can deny the influence of contagion, and the air of marshes, on the human body; but I conceive that too much has been attributed to them, too little to the previous state of the constitution, and also by far too little to the common causes of fever, and to internal irritations. A weighty argument in favor of contagion, is sometimes drawn from the well known fact, of fever spreading not only from one to another in a family, but also in the same tenement; but the similar circumstances under which the inhabitants are placed should not be forgotten. The anxieties, the hopes and fears, which alternately effect individuals attending others whom they love, the exposure to cold and fatigue, the night-watching and want of rest, the irregularity in taking nourishment, and the neglected state of the bowels, all tending to produce loss of balance in the circulation, will go far to account for a number of individuals in the same neighborhood, and more particularly in the same family, being affected one after another. Neither should it be forgotten, that all these individuals residing in the same locality, and living in a similar manner, may have been exposed at the same period with the person first affected, to the miasm or epidemic influence, or some of the common causes which produce fever. Why one individual should be sooner attacked than another, and



have the disease perhaps more severely, it is difficult to determine. An interesting question here arises,—What length of time does the contagion remain latent in the body, before it shows its effects? This is an intricate question, and one which has never been satisfactorily investigated. Some say it can be for a few days or weeks only, while others state with great confidence, that it may remain many months. Dr. Gregory used to assert that contagion might lie frozen for any length of time, and resume its virulence upon being thawed. There are other interesting facts, which are not sufficiently attended to in considering this subject. It is my belief, that contagion will not produce fever, applied a thousand times to a person, if he be in a good state of body and mind. Dr. Gregory stated, that he must have been exposed to the influence of contagion some 20 or 30,000 times, without affecting him once. The contagion of fever, to produce its effects, must be applied to a person ill fed and clothed, or to one whose stomach and bowels are out of order, or who is laboring under the effects of some mental depression.

From the evidence before us in the records of medicine, it appears that individuals residing in low marshy countries, are peculiarly liable to fever which has been termed intermittent. The air of a marsh, however, does not differ in its chemical properties from that of the most salubrious situations, it supports combustion, and therefore cannot, as some have supposed, be deprived of much of its oxygen. If its constitution were changed, it would affect all who breathed it, blacks as well as whites; but this is not the fact, for there are very many people, who live in the centre of marshes for years, without being attacked by intermittent fever. I have myself had many attacks of this disease during a residence in a marshy district, therefore it has been in my power to investigate this subject minutely, not only with regard to the phenomena of the disease and its causes, but also the sensations produced during the proxysms. From personal observation thus acquired, the first circumstances which attracted my attention, were, that men were more liable to the disease than females,—whites than blacks,—the dissolute than sober steady-living men; and that agues were most prevalent at new and full moon.

Women are less liable to the disease than men, because they are less exposed to vicissitudes of weather, their habits are not so dissipated, and they keep more regular hours. Blacks born in the West Indies, are less liable to this disease than whites, partly, no doubt, from the nature of their constitutions, but principally because they have neither the means nor the liberty to indulge themselves like their masters. But I am convinced that difference of constitution, enabling blacks to resist the causes of fever better, has been very much overrated, and that diseases which destroy so many Europeans, are owing more to licentiousness than to the effects of climate. The dissolute are more liable to this disease than others, because they often expose themselves during the night, when the system is in a state of collapse; and the disturbance which is created and kept up in the functions of important organs, by constant excesses, must not be lost sight of.



Moisture alone has a great effect in producing disease, and its influence is speedily observed on the mind as well as the body. But moisture alone will not produce intermittent fever, the influence of excessive heat must be superadded, and then there is a rapid evaporation from the earth's surface. It is this evaporation, I imagine, which is productive of so much mischief to European constitutions in warm climates, particularly where there is any tendency to collapse. Agues are not commonly prevalent during the rainy season, when the surface of the earth is more or less covered with water; but they become so after the dry season sets in, when it is alleged "the sun acts upon the soil itself, producing deep rents, whence it is supposed the miasm emanates." This, however, can be more satisfactorily accounted for in a different manner. During the rainy season, white people take greater care of themselves, and are less exposed; the sun is obscured from the eye by dense humid clouds; there is consequently a pretty constant deposition of moisture, but little or no evaporation. The sun's influence becomes very great when the rainy season ceases, and the extent to which evaporation goes on, exceeds all belief. It is then that severe fevers and dysenteries generally prevail.

Dr. Fergusson has observed, that "the same rains which made a deep marshy country perfectly healthy, by deluging a well-cleared one, where there was any considerable depth of soil, speedily converted it, *under the drying process of a vertical sun, into a hot-bed of disease.*"

With regard to the apparent influence of the planetary system in intermittents, it must be observed, that in localities where this disease generally prevails, the surface of the earth is scarcely above the level of the sea at high tides; so much so, that to prevent inundations, dikes are thrown up. At new and full moon the tides rise, the marshes become covered with water, the drains become charged, and the daily effects of evaporation produce the disease. I am indeed aware, that in the interior of Ceylon, and above the Ghauts, in the peninsula of India, where the tides cannot have the slightest influence, agues are very prevalent, both among natives and Europeans at certain periods of the moon's age. I am informed by Mr. Marshall,\* that in the interior of Ceylon, he has seen the mercury in the thermometer rise from 60° to 90° in the shade: and in the sun's rays even to 142°. The difference of temperature to which the troops were exposed from 5 o'clock A. M. till mid-day, amounted sometimes to 82 degrees.

Some have attempted to account for the occurrence of remittent fevers by the effects of excessive heat; but I believe that heat alone, unless the temperature be very high indeed, will not produce fever in any climate, till moisture be superadded, or sudden changes of weather take place, when the thermometer will suddenly fall twenty or thirty degrees, as I have myself observed in unhealthy seasons.

It will be seen that it is not my intention to deny the existence of some invisible substance suspended in, or mixed with the air of the atmosphere, and which

\* The well-known author of *Notes on the Medical Topography of Ceylon—Hints to Young Medical Officers, &c., &c.*

may produce intermittent fever.\* A fact may be mentioned on this side of the question, which must carry considerable weight with it. It has occurred to me to see a good deal of intermittent fever in situations far remote from marshes, but in every one instance the individuals had been at some period of their lives in marshy districts; yet it is certainly very strange that some of them never had a paroxysm during the period of their residence in these places, and not till months, and in some instances years, had elapsed.

Some contagious diseases are communicated from person to person, by breathing the air in the apartment where the sick person is confined; others require that actual contact should take place; and some diseases are communicated in either way. In the plague, it would appear that actual contact with the affected individual, or with his apparel, is necessary; whereas, in small-pox, the contagion may be received merely by coming into the same room, and it is also conveyed by inoculation. Contagious diseases spread slowly from one person to another, and from house to house, and may often be concentrated within a circle, where it will attack all, or almost all, who are exposed to the contagion, particularly those who have not had the disease before.

When we say a disease is epidemic, it is understood that we mean one, which is produced by a certain state or condition of the atmosphere at present unknown, and which has baffled the exertions of every one who has entered upon its investigation. The term implies that a great number of people are suddenly seized at the same period. An epidemic, after continuing for a longer or a shorter period, suddenly ceases, at a time perhaps when the greatest number of patients are affected with it. These are facts which appear to have confounded those who assert that yellow and other fevers are invariably contagious.

It appears to me that intermittent fever is never contagious: but I am of opinion the yellow fever, and that which has been termed typhus in this country, are so, under particular circumstances, in a very high degree. Observation and experience have induced me to conclude, however, that this cause of fever has been very much overrated.

In the year 1793, Dr. Chisholm made an attempt to prove that the fever which then prevailed in the West Indies, was highly contagious, and imported from Bulam, on the coast of Africa, by a ship called the Hankey. Similar attempts have since been made in many places in America, as well as in Europe, to account for the severe fevers which have prevailed from time to time. The favourers of importation have invariably failed in proving the disease to have originated in that manner, and have not been able to show that it had not a local origin. In the town and garrison of Gibraltar there are always cases of fever, particularly in sultry weather; many are severe, attended by yellowness of the surface of the body, and vomiting of a dark-coloured matter commonly called black vomit. These cases are considered by all candid observers to be the ordinary remittent fever, common to this and all other places un-

\* Some writers go the extraordinary length of speaking of the specific gravity of Marsh Miasm.

der similar influences. The majority of the cases are found to occur in the lowest, worst ventilated, and filthiest parts of the locality. But in 1804–1810–1813–1814, and 1828, Gibraltar was visited by a fever more severe in its symptoms, more fatal in its results, and attacking a larger proportion of the troops, as well as the inhabitants. On each of these occasions attempts were made to prove its importation, and that it spread by contagion, and had no trace of local origin. Considerable doubts were, however, entertained upon this subject; but in 1814, the supporters of importation and contagion failed so completely in showing the foreign origin of the fever which then prevailed, that many sensible people were led to doubt, and others to deny, the truth of such views. I wish at present to confine my observations to the source of the fever which prevailed in the town and garrison of Gibraltar in 1828.

A host of medical men, with the late lamented Dr. Hennen at their head, maintain that the disease was of local origin, for which there were abundant sources, and that there is no proof of its having been imported.

One or two others, with Sir William Pym, Superintendant General of Quarantine as their leader, not only insist that it was not of local origin, but that it was imported in a particular ship called the *Dygden*, which sailed from Havana on the 12th May 1828, and arrived at Gibraltar on the 28th June.

I have carefully perused all the evidence produced through the medium of the medical periodical press, and published by the following gentlemen:—Mr. Frazer, late Surgeon to the Civil Hospital at Gibraltar; Dr. Smyth, Surgeon 23d Regiment; Mr. Amiel, Surgeon 12th Regiment; Mr. Wilson, late of Medical Staff, who I believe retired from the service, partly from disgust, and partly from the persecution to which he was subjected, and would not submit; Dr. Barry, Physician to the Forces: also, Sir William Pym's replies to queries put to him by the Royal Medico-Chirurgical Society of Cadiz,—together with the opinions of the Board of Commissioners, and certain documentary evidence respecting the annual occurrence of fevers of a similar character at Gibraltar, as extracted from the books of the Civil Hospital, and authenticated by the signatures of a number of highly respectable gentlemen.

After the most careful perusal of these productions, duly considering all the facts adduced in evidence by all parties, my deliberate opinions are as follow:

1st. That the fever of 1828 was of local origin, and for which there were unfortunately abundant sources in the bad state of the drains, the crowded condition of the poorer inhabitants, and the exceedingly filthy and badly ventilated state of their abodes.

2d. That there is not a tittle of evidence to show that the disease was first propagated by communication with the Swedish ship *Dygden*. Indeed, it does not appear that there was any cause to suspect this ship of bringing the seeds of the disease with her from Havannah. In the first place, we see from her clean bill of health, signed by the authorities there, that “this city and its neighbouring towns are free from all plague or contagious epidemic disease; as likewise the said captain, with the fifteen men of his crew, are in a perfect



state of health, according to the muster by his roll," &c. In the second place, we find the declaration of the captain, and the report of Dr. Hennen to the Governor, the first of which bears that he "sailed from Havannah on 12th May, with a crew of fifteen men, all in good health. A few days after, two men of the Swedish part of the crew complained of severe headache, and pains in the limbs, which increasing, they had to go to bed. Through sudorifics and purging medicine, they *got well in eight days*, so as to be able to attend their duties. During that time, five others had been taken ill of the same complaint, *but recovered in a few days*, under similar treatment. A lapse of ten or twelve days followed, during which the whole crew were in perfect health; but upon getting into a higher latitude, I met with gales and rain, when the greater part of the crew suffered much from wet, and immediately after, those who had till then been well, were taken ill, probably from cold produced by the weather, yet the symptoms which appeared were the same as in the others. The youngest recovered in a short time, but the eldest two died, one after five, the other four days' illness, which took place on the 27th May, and 1st of June. The old clothes they had worn, together with hammocks, and what was in them, were thrown into the sea with their bodies."

In Dr. Hennen's report to the Governor of Gibraltar, dated 2d August, 1828, we find it stated, that he had minutely inspected the captain and crew, "whom I found in perfect health, and I shall repeat my inspection before the expiration of their quarantine, on the 6th of the present month. In my letter of the 29th July, I mentioned, as the reason for putting the ship in quarantine for forty days, that two men died on the passage. It is now sixty-six clear days since the first man died, and sixty-one since the death of the last, *and nothing like disease* has since appeared, nor have I the most distant reason to apprehend danger to the public health, from any circumstance connected with the Dygden."

3d. If the disease were contagious, it does not appear from the evidence to have been so in any high degree.

4th. It is an undoubted fact, known to every medical man who has been upon the rock, that remittent fever, attended by yellowness of skin and black vomit, is a very frequent occurrence during the autumnal months. I am in possession of an authentic document, containing a history of the symptoms and appearances on dissection, observed in cases of remittent fever treated in the Civil Hospital at Gibraltar in 1821, and the five subsequent years. Having compared these with the cases of 1828, I can discover nothing different. The two symptoms pitched upon by Sir William Pym, as pathognomonic of true yellow fever, viz. yellowness of the surface and black vomit, were present, and the morbid appearances found after death were perfectly similar.

The superior medical officers have had a heavy charge made against them in the following statement by Dr. Smith. "At one period of medical rule in this garrison, every variety of fever *was ordered to be returned under one head*. Such, indeed, was the thralldom of the military medical press, (if I



may so use the expression) at Gibraltar, from the termination of the epidemic fever of 1814, until the arrival of Dr. Hennen in 1826, that it was considered a most wicked heresy for a surgeon of a corps to return fevers under any other head than *simple continued fever*. The consequence is, that although febrile diseases are the most frequent of the numerous cases treated both in the Military and Civil Hospitals, no correct table of fevers can be now formed from the returns of these establishments; no distinction whatever being drawn between the different species of remittent and continued. The authors of such a measure can best answer for themselves." Was this done to deceive the Governor, or did it receive his approbation to mislead the authorities in England? This calls aloud for serious investigation, in order to prevent the repetition of such disgraceful management. That it could have been endured, can scarcely be believed, except by those who, like myself, have been exposed once or twice to the tyrannical conduct of ignorant and obstinate medical superiors.

5th. That Sir William Pym's answers to the queries of the Spanish physicians, are highly discreditable to him as a scientific man, and calculated to injure the public interests, however much they might be intended to fix him in the receipt of the salary derived from his sinecure office of Superintendent-General of Quarantine in Great Britain. These answers are for the most part vague assumptions—some being drawn from insufficient evidence—others from no evidence whatever—while many of them are at complete variance with fact, of which last, the following is a notable example:—Answer to question 3d. "The first cases were, as I have said, in a house of 24 district, *the situation of which, is healthy, very well ventilated*, and 200 feet above the level of the sea." Now it was in this district of the town that the fever avowedly first appeared, and was for some time confined. Whether it was such a healthy, well-ventilated spot, or one, the air of which was saturated with febrific poison, the reader is left to draw his own conclusions after the perusal of the following statement, copied from a document which I received from Gibraltar. It was not written to contradict Sir William Pym's answer, as it never entered the writer's imagination that the Superintendent-General of Quarantine, or any other gentleman who had resided at Gibraltar, could have hazarded such a statement.

The district in question (No. 24) "is situated in a natural gorge of the mountain, and is rendered still more close by a high wall raised for the military protection of the town. The wall is called 'Charles the 5th wall,' and is situated on the south of the town. The rear of the district, (24) together with the whole town, is impenetrably shut out from the influence of east winds by the rock itself. The district itself is particularly cut off from the beneficial effects of perfusion by a high and impending semi-circular bluff of the mountain, in some degree insulating it from the rest of the town, on the north side. Charles the 5th wall is higher than the tops of the buildings in this district. This locality is therefore excluded from the influence of every direct wind, unless that which blows from the west, which was not the case when the fever broke out. Besides, it is deserving of particular attention, that the superficial soil was filthy,

that the district is intersected with numerous collateral drains, and gives origin to several others which unite on the level below, and these form one main sewer which discharges itself into the sea at water mark, directly in front of this part of the town. The wind enters the mouth of this sewer on the beach, rushes upwards through the drains, and escapes through gratings (which are closely concentrated in this district) loaded with offensive and noxious exhalations, and diffused within a limited circle among the houses erected round the mouths of the great branches. There is also a deep and large common soil-pit in this district, which at the commencement of the epidemic was filled with impurities of every kind. In this situation a drain burst about the beginning of September, in the barrack-yard of the 12th regiment, and when I saw it, its contents had broke up the solid pavement, and was boiling over. The atmosphere of this part of the town was consequently noxious, and contained within itself a sufficiency of putrid matter to have disseminated a febrific miasm over the whole garrison. Now, it is a remarkable fact, that the two first cases of the fever originated on the ground floor of a badly ventilated house in this district, and in the close neighborhood of one of the openings of the drains; and about 50 of the cases in the beginning of the epidemic were distinctly traced by several medical officers to come from the vicinity of the openings of the drains and privies of this district, or in the course of the drains."

We find the following statements made by Dr. Hennen, in his official communications, which I have copied from Dr. Smith's paper: "That so many cases of a fever of a very serious nature have appeared in the barrack of the Sappers and Miners, on Hargrave's parade, which I would observe to your excellency is in the line of the drains, crossing from district No. 24 that I feel myself called upon to submit the propriety of immediately encamping that corps, and totally evacuating the barracks." In another letter to the Governor, Dr. Hennen further stated, "In reference to my letter of this day's date, I have minutely inspected district No. 24, in company with Mr. Wilson, of the civil hospital, Mr. Woods, the medical officer attached to that district, and other staff-officers; and it is with much regret that I have to state to your Excellency, that at every step I took in that district, I had reason for surprise, not that fever had broken out there, but that it had not extended farther. From whatever causes it may have proceeded, the pauper population is dense to a degree incredible, except to those who have seen it. In sheds without ventilation, without drainage, and generally composed of the slightest materials; *in tiers of beds as close as in a crowded transport*, numerous individuals sleep. They go out to their work at an early hour, and return at gun-fire, locking up their miserable places of nocturnal shelter during the day, and leaving them saturated with the steam of their bedding, their food, and the overflowing receptacles of their ordure. The detail would be too disgusting to enter into; but I most respectfully submit to your Excellency, the indispensable necessity of sweeping away the whole of these sheds, which I have every reason to suppose are unauthorised by the government." A commission was subsequently appointed by the Governor's or-

ders, to inspect the different districts of the town, which was composed of military as well as medical officers, and I copy the following statement from their report: "In the course of our inspection, we were struck at every step we took, with the density of the population." So much for Sir William Pym's answer to the 3d question, in which he has given a confident assurance of the healthy situation and well-ventilated state of No. 24 district, where the first cases of fever occurred in 1828. Both statements cannot be true, and I am sorry to say there are many other points in the same predicament. I wish it were possible for me to reconcile them with each other, not only on account of the reputation of Sir William Pym, as an old officer, but for the credit of the department to which he belongs, and the judgment of the authorities who appointed him to the lucrative situation of Superintendent-General of Quarantine in Great Britain.

6th. It is my opinion that the Board of Commission was not happily chosen by Sir George Murray. No medical officer should have been nominated, or any other individual, however exalted his rank, who had previously expressed decided opinions on the subject to be investigated.

7th. I humbly conceive Sir George Don, the governor, acted contrary to his orders, and certainly he did not act wisely, by delegating his authority as President of the Commission, to any individual, and more particularly to Sir William Pym, the Superintendent-General of Quarantine, who immediately nominated his newly-acquired partisan, Dr. Barry, to be Secretary to the Commission. That Dr. Barry is an ingenious gentleman is well known; that he changed his opinions very suddenly at the time of Dr. Hennen's death is alleged, and has not been satisfactorily disproved; and that he immediately adopted the opinions of his new chief is undoubted. That Dr. Barry, in his capacity of Secretary, gave colouring to the evidence produced before the Commission, or improperly put leading questions to the parties examined to favour the views of his chief, I do not mean to state. But it will be admitted, that such functionaries as President and Secretary should not have been chosen from a class of persons to whom the slightest suspicion could be attached. On the list of the commission, I find another name as exceptionable as those of Sir William Pym and Dr. Barry, viz. that of Dr. Broadfoot, Superintendent of Quarantine at Gibraltar. Besides these, there are also the names of two official gentlemen, the Captain of the Port, and the Town Major, who were thus improperly placed in a situation either to accumulate or reject evidence, which might show inattention or dereliction of duty to such an extent as to compromise their situations! The only unexceptionable appointments on the Commission were those of Colonel Chapman, Civil Secretary, and Judge-Advocate Howell, and the coincidence of their opinions is quite remarkable.

Colonel Chapman's opinion is as follows:—Judging from the evidence produced before the Board, the manner in which it has been given, together with the description of persons who have been brought forward as witnesses, I am decidedly of opinion that the late epidemic disease is of local origin. As to



the importation of the late epidemic, I am of opinion *that the attempt to prove the introduction of the disease, after many months of fruitless inquiry by those who wish to prove it, has totally failed.*"

Judge-Advocate Howell gave the following opinion: "Upon a careful review of all the proceedings before the Board, I am of opinion, that the evidence brought forward has totally failed to prove that the late epidemic disease was introduced from any foreign source, either by the ship *Dyglén*, or by any other means; and I am further of opinion, that the late epidemic had its origin in Gibraltar."

From Botta's history of Tuscany, the following statements are extracted respecting the epidemic yellow fever which prevailed in Leghorn in 1804. "It was occasioned, as it appears, by the prevalence, during the summer of that year, of south winds, unusually warm and rainy; this sickness was by some termed the yellow fever, by others the black vomit; both names which agree well with the symptoms which mark it. *It began to rage in the lowest quarters of the city, and those most crowded and filthy*, to such a degree that some were cut off in seven days, some in five, others in three, and even in the short space of one day." "The disease was most violent in robust young men, more mild with the weak, the old, and with females; but almost all those last, attacked when pregnant, died; almost all the children escaped." Speaking of the remedies, it is remarked, "On the other hand, it was found, that from the air being impregnated with animal exhalations, the disease was more easily propagated, and the person infected was more violently attacked; and a confirmation of the argument was found in the circumstance, that the quarters of the city most filled with filth, and the houses of the poor, were the chief seats of the disease. On the contrary, the airy quarters, and where the houses were neat and clean, and enjoyed open and free air, were either exempted, or did not become worse, or the infection did not spread from one body to another." "It did not extend into the country, although persons in numbers, and goods in quantities, were transported and spread from district to district, and from the city to the country." On this occasion, also, an attempt was made to prove the importation of the fever from Vera Cruz, but was not successful.

When the yellow fever prevailed in Philadelphia in 1794, the celebrated Dr. Rush was most shamefully persecuted by the authorities, to whom many of his medical brethren lent themselves, for having proved that the yellow fever existed in that city—that it was generated in the place, and had not a foreign origin. It is now nearly thirty years ago; and after reading the report made on the subject by his opponents, I can readily join Dr. Rush in his conclusion, that "it is impossible to review this report, without blushing for the shameful submission made by the Science of Medicine to the commercial spirit of the city."

It may be useful to my readers to know the evidence which Dr. Rush produced to shew the local origin of the fever, and it will be observed that an attempt was made on this occasion to fix its importation on a ship. "It was



produced," says Dr. Rush, "by the exhalations from the gutters, and the stagnant ponds of water in the neighborhood of the city. Where there was most exhalation, there were most persons affected by the fever. Hence the poor people, who generally live in the neighborhood of the ponds in the suburbs, were the greatest sufferers by it. Four persons had the fever in Spruce street, between Fourth and Fifth streets, in which part of the city the smell from the gutters was extremely offensive every evening. In Walter Street, between Market and Walnut Streets, many persons had the fever; now the filth of that confined part of the city is well known to every citizen. On the 25th August, the brig Commerce arrived in the river from St. Mark. After lying five days at the fort, she came up to the city. A boy who had been shut out of his lodgings, went in a state of intoxication and slept on her deck, exposed to the night air, in consequence of which the fever was excited in him. This event gave occasion for a few days to a report that the disease was imported; and several physicians, who had neglected to attend to all the circumstances that had been stated, admitted the yellow fever to be in the town. An investigation of this supposed origin of the disease soon discovered that it had no foundation."

Vitiated air,\* and the effluvia which proceed from the bodies of individuals crowded together in jails, hospitals, and ships, have always been abundant sources of fever. Dr. Fordyce mentions instances where sheep and hogs were transported during the American war, from England to America, in the holds of ships, in which many were confined in a small space; an infectious fever frequently broke out among them, which destroyed great numbers.

History affords many melancholy examples of the baneful effects of vitiated air and human effluvia, and the speed with which they destroy animal life. The best example is to be found in the occurrence which took place last century in the black hole at Calcutta. One hundred and forty-six unhappy individuals were forced into a dungeon, about eighteen feet square, at eight o'clock at night, and at six next morning, when released, only twenty-three came out alive; *most of these were in a high putrid fever, and subsequently died.*

It becomes an interesting question, but one too extensive for this work, how contagion propagates itself, and to which part of the body it is first applied? In this inquiry, we shall be much assisted by the circumstances which are observed to take place after inoculation with small pox. The mucous membrane of the lungs seems to be one of the first parts in which the diseased action is to be detected; and careful observation has induced me almost to believe, that in diseases produced by contagion, the bronchial membrane rarely if ever escapes.

Fourcroy tells us, that in several of the burial grounds in France, in which the graves were dug up sooner than they ought to have been, the persons employed have occasionally been asphyxiated; those who were standing at a little distance, were often affected with vertigo, fainting, nausea, loss of appetite, &c.

\* It is to be regretted that the term *Malaria* is not restricted to foul air, according to its literal meaning.

History affords us remarkable instances of the occurrence of diseases decidedly epidemic; the most ancient are those which will be found in sacred writ, in which we find, that on one occasion seventy thousand persons were destroyed by pestilence in three day's time; and we are told, also, that one hundred and eighty-five thousand persons were destroyed in the Assyrian camp in a single night. The most remarkable epidemic of modern times, is the Cholera of the East, which extended itself in the very teeth of tempestuous winds.

Pythagoras first started an opinion respecting critical days, and he had an unlimited belief in the occult powers of certain numbers. Hippocrates seems to have entertained similar opinions, and it is an essential part of the old doctrines of concoction, according to which it was supposed that a separation of the morbid matter had a tendency to take place on one of the critical days, by a discharge from the skin, bowels, kidneys, or blood-vessels.

I have no belief in the influence of critical days, although I admit that the crisis frequently takes place in some of the ways mentioned. When an organ is affected with disease, there is a constant effort of nature to throw it off; this effort is, in truth, one of the great principles of life, and its object is effected by a determination of blood to another organ; occasionally a spontaneous discharge of blood takes place.

From the time of Hippocrates, it has been generally believed that fevers had a tendency to remit on the 3d, 5th, 7th, 9th, 11th, 14th, 17th, 20th days, and even on the 21st. Many modern physicians have adopted this doctrine; but I doubt much whether it has not proved more injurious than beneficial in the treatment of disease. Often may physicians be seen prescribing a placebo, because the critical day is at hand, when they ought to be actively employed in eradicating the disease. When attending to this point, I have very often found the calculations made erroneously; and not unfrequently I have seen physicians disagree as to which was the proper critical day—one calculating from the period when the rigour took place—another from the period when the heat of skin occurred—and I have seen a third calculation made from the time when the patient confined himself to bed. There can be little doubt, that fevers and other diseases have a tendency to run through a regular course, and when they terminate favorably, this happy event generally takes place upon the occurrence of an eruption, or of some discharge, as by diarrhœa, copious perspiration, flow of urine, expectoration, &c. It cannot be denied, however, that in some diseases there is a strong tendency to periodicity, but far more so in the accession than termination. Thus, in intermittent fever, the attack may come on regularly at the usual period, but each stage may occupy a shorter or a longer space of time in one paroxysm than another. Sometimes an individual dies in the cold fit, but much oftener the hot fit is not relieved by sweating, and his disease becomes a continued or remittent fever, or inflammation of a particular organ takes place. But it is of little importance whether the doctrine of critical days be true or false, if the physician acts wisely, and neglects nothing which can tend to reduce the diseased action..

## INTERMITTENT FEVER.

OF all the febrile diseases, intermittent is generally the simplest in form. It is composed of three stages, beginning with a cold fit, followed by heat, and terminating in profuse perspiration. It has been known from the earliest ages, and is most prevalent in some parts of North and South America; the Pontine marshes near Rome; in Holland; and in the fens of Lincolnshire and Cambridgeshire in England. We are told, that in the sixteenth century, this fever was very prevalent, and proved fatal to a great number of people in London; and in the year 1558 it raged like the plague, and was also very fatal; but it has become less frequent in Great Britain, which is to be ascribed to the increased comforts of the people, to their habits of cleanliness, and to the improvement which has taken place in the climate, owing to the draining of lands, and cultivation of the soil. It has been stated, but, I believe, without foundation, that a miasm producing intermittent fever is generated in London in the neighborhood of St. James's Park. Intermittent fever is of very frequent occurrence in all warm countries, and is one of the purest specimens of a disease depending upon an irregular determination of blood, in which the system is often relieved by the unaided powers of the constitution.

Cullen's definition is, "Fevers arising from marsh miasmata, consisting of many paroxysms, with intermission, or at least with an evident remission intervening, returning with remarkable exacerbation, and in general with shivering; one paroxysm only in a day.

Like most symptomatical definitions, this is very exceptionable. Paroxysms of intermittent have taken place from sudden change of atmosphere in situations where no miasm ever existed; and the most severe cold stage which ever came under my notice, and which lasted twenty-six hours, was produced by exposure to frost after the individual had got wet on the top of a coach. Mr. John Hunter informs us, that two children had ague from worms; they took bark, but it did them no good; but the worms were destroyed, and they got well. We have in like manner, says he, agues from many diseases of particular parts, more especially of the liver and spleen, and from an induration of the mesenteric glands. Many instances are also recorded from repelled eruptions, the drying up of old discharges, as well as from the application of cold.

Sir George Baker has given an account, in the Medical Transactions, of an intermittent that prevailed in 1780; it affected the inhabitants who lived in the higher parts of the country, while those in the marshes escaped. Sir Gilbert Blane informs us, that while the village of Greenhythe, nearly on a level with the marsh at Northfleet, is unaffected with intermittent fever, the adjacent hills suffer considerably from them.

There are usually reckoned three kinds of intermittents, the tertian, the quotidian, and the quartan. But they ought strictly to be regarded as the same disease, with a longer or a shorter interval; and the one frequently runs into the other. We often, however, see a double quotidian. I have observed, that

the longer the interval, the more severe is the paroxysm, and *vice versâ*; but there are many exceptions. TERTIAN is employed to express that form of disease in which there is an interval of forty-eight hours from the commencement of one attack to that of another; QUOTIDIAN, twenty-four; and the QUARTAN, seventy-two.

*Phenomena of Intermittents.*

When an individual has once had an attack of intermittent fever, he is afterwards more liable to the disease, and is sensible of its approach some time before any one suspects him to be ill; the toes and the last joints of the fingers feel cold and benumbed, and the nails have a blueish color; he has sensations of languor, and long fits of yawning; occasionally at this period there is headache, sometimes stupor, and pains in the back and loins.

*Cold stage.*—When the paroxysm actually commences, the patient feels the extremities cold, with a sensation as if a small stream of very cold water were flowing down the spine, which extends itself to the thorax and abdomen. He has great desire for warm drink, and to cover himself with as many bed-clothes as can be procured; the prostration of muscular power is considerable; the sense of cold very soon becomes insupportable; the teeth chatter, and there is an universal tremor over the body; and if I can trust my own sensations, and the accounts of others, the tremors affect internal as well as external parts.

These tremors sometimes terminate in convulsions. The respiration is always laborious, short, and hurried, and the individual is unable to take in a deep inspiration when desired; a short hard cough frequently attends, without expectoration; there is great oppression at the præcordia. Some individuals complain most of headache, some of pain in the back, in the lumbar region and lower extremities, and others of universal pain. In almost all cases the patient is incapable of attending to any thing. Sometimes there is stupor, and at others, coma or delirium. The features are much shrunk and pale; the eye looks dull and hollow, while the cheeks and lips are more or less of a livid hue. The pulse is oppressed and weak, sometimes slow, at others quick, and frequently intermits; but the violence of the tremors renders it often impossible to feel the pulse distinctly. The tongue is moist. It is a curious circumstance, that while the patient complains of intense cold, the heat of the body every where, except in the extremities, is sometimes above the natural standard.

The paroxysm occasionally comes on without any rigor, instead of which the patient feels a slight sensation of cold, or severe head-ache, is lethargic, or affected with languor and yawning. Sometimes the paroxysm is announced by violent articular, lumbar, and frontal pains; and sometimes a patient falls into a profound sleep for several hours, and awakes in a violent hot stage. These various forms are called by the vulgar the dumb-ague. It sometimes happens, that at the next attack, instead of a regular paroxysm, a violent pain is felt in the situation of the supra-orbitary foramen, and extends to the brow, affecting the nervous twigs of the frontal branch of the fifth pair: this pain often con-



tinues for many hours, and seems to resemble the *tic douloureux*. But it would be vain to attempt a description of all the appearances which this disease occasionally assumes.

The duration of the cold stage is very various, rarely less than half an hour, and seldom exceeding four. It sometimes happens that an icy coldness steals over the whole surface, and in aguish countries it is not an uncommon circumstance for persons to die in the cold stage.

*Hot stage.*—After the cold stage has continued for a longer or shorter period, the hot stage commences; the one gradually runs into the other, there being no distinct interval between them. The change is attributed by patients themselves to the treatment which has been employed, or to the effects of vomiting which sometimes accompanies the cold stage. The skin becomes hot and dry, sometimes pungent; the face flushed and swollen; the thirst urgent, the tongue parched; there are restlessness, general uneasiness, and oppression at the præcordia; the respiration is hurried and anxious; and almost invariably, the patient complains of acute pain in some region of the body, generally in the head and lumbar region, very often also in the thorax, and left hypochondrium; there is frequently a slight degree of disturbance in the mental faculties, sometimes indeed delirium. On some occasions there are symptoms, which announce cerebral disturbance, viz., severe headache, tinnitus aurium, and throbbing of the carotids. The pulse is frequently quick, sharp, and bounding, even in patients whose health and strength are already much impaired.

I have seen the thermometer, the accuracy of which had been well ascertained, rise in the hot fit, even in this country, to  $110^{\circ}$ , and in warm climates it is stated to rise as high as  $112^{\circ}$ .

The duration of this stage varies more than the former; in general it continues from four to twelve hours, and terminates in perspiration; but on some occasions the febrile symptoms continue for several days or weeks, when the disease is termed a continued fever; now and then there are marked remissions followed by exacerbations, when it is called a remittent: in addition to the last-mentioned circumstances, there are sometimes considerable irritability of stomach, black vomiting, and a yellow tinge of the skin, then the case is termed a bilious remittent, or yellow fever.

*Sweating stage.*—After the hot stage has existed for some time, it terminates in the sweating stage; the perspiration appearing first on the forehead, arms, and legs, soon becoming general and profuse. It is difficult to calculate the quantity of this excretion in any case; but it is admitted by all who have attended to the phenomena of intermittents, to be very great. From the moment the perspiration begins to appear, the uneasy sensations, and other symptoms above described, begin to subside, and generally vanish after it becomes copious.\*

\* M. Andral, in the first part of his very excellent pathological writings, p. 477, mentions a very curious case. A young man, who had been hemiplegic on the left side of his body from his infancy, was attacked with tertian intermittent. He only perspired on that half of his body which had not been paralysed. He stated that in his best health he never perspired but on one arm and leg, and one side of his face and neck.

Many patients fall into a profound sleep for several hours, and then awake quite refreshed; others complain much of weakness, while some whose constitutions have not been previously injured, are able to resume their ordinary duties almost immediately.

When this disease continues for some time, the patient not only becomes weak, and loses flesh, but he has no interval of ease; each paroxysm increases his sufferings, and he feels comparatively little relief from the perspirations, which he often prolongs, in the vain hope of alleviating his symptoms. He complains of head-ache, intolerance of light and sound; or he has a cough and dyspnoea, which will almost always be found to depend on inflammation of the lining membrane of the air passages; or he has constant thirst, flatulency, constipation, or diarrhoea, with griping pains in the bowels, a dull pain and sense of weight in both hypochondriac regions, generally in the right; the skin is hot, and feels harsh; the feet and legs frequently become œdematous; the abdomen tumid; the urine scanty; the tongue dry at the tip, the rest of it being furred; the patient passes restless nights; and perhaps in the very next paroxysm he may die in the cold stage; or the sweating stage may not succeed the hot, and he may die in a few days of continued remittent fever; or decided marks of inflammation of the brain, liver, lungs, &c., take place, and he is cut off, from the effects of disorganization in these organs. Such circumstances are of frequent occurrence in warm countries, where intermittents prevail; many such melancholy examples will be found, by referring to the works of Sir John Pringle and others; but more particularly to Sir James Fellowes's reports of the destruction occasioned by this fever among our troops employed in the expedition to Walcheren. The history of the fever which annually prevails at Rome, and which has been so ably and faithfully described by M. Bailly, also corroborates the above statements.

This fever sometimes attacks individuals when laboring under internal diseases, such as dysentery, hepatitis, &c., and I have frequently seen a remittent converted into an intermittent. It may also be mentioned, that enlargements of the parotid take place during the course of intermittents. The gland increases in size and hardness during each cold fit, and it seems, in the first instance at least, to owe its enlargement to sanguineous engorgement; subsequently the gland suppurates.

It has already been mentioned, that when intermittents have continued for some time, the lower extremities frequently become œdematous, the belly tumid, and sometimes even ascites takes place. The first does not denote danger, but the last always occasions an apprehension of an organic lesion of some important viscus. Nevertheless, both may be occasioned by mere functional derangement. In these cases, the thirst is considerable, and the secretion of urine scanty, and sometimes dysenteric symptoms manifest themselves.

#### *Appearances found on Dissection.*

The following appearances have been observed in the bodies of those who died in the cold stage.—The vessels of the brain gorged with venous blood;

and the carotids, after passing into the skull, may sometimes be seen greatly distended with black blood.—The lungs much congested, of a dark colour, which is the condition described by the older writers, by the term “putrid state.” In the very few instances which have fallen under my own observation, I have not observed any structural disease in these organs; for, upon making sections, and squeezing them in water, they have resumed their natural appearance and buoyancy.—The heart, and veins near it, are gorged with blood; and sometimes an effusion of blood, or bloody serum, is found in the cavity of the pleura. In the abdomen dark-coloured patches are sometimes seen on the peritoneum, occupying a considerable extent of the intestinal tube; and, upon cutting through these portions, all the tissues are found highly injected, and it is probable that this appearance has often been mistaken for mortification.—The liver is sometimes gorged with blood and discoloured; but when treated, like the lungs, in water, this organ is restored to its natural colour, unless it has been altered in structure by previous diseased action, when it is easily broken down, like coagulated blood. I have seen the spleen in the same state; but was not able, by washing, to restore it to its natural appearance. The stomach and intestines contained, in one instance, a dark, sanguineous-looking matter, like the black vomit.

In corroboration of the above statement, as well as in proof of the pathological and practical views yet to be detailed, I beg to subjoin a short account of some of the interesting cases and dissections described in the excellent work of M. Bailly,\* whose zeal in the cause of science, led him to Rome in the sickly season, for the purpose of investigating the nature and seat of intermittent fever.

“Case I.—Benoit Simouelli, æt. 30 years, of a strong constitution, affected for some time with a tertian fever, came to the hospital on the 2d July 1822,

“3d, Had a slight febrile access, afterwards took  $\frac{3}{4}$  ij. of bark.

“4th, Towards mid-day, he walked in the ward, felt very well, and laughed with the other patients. All of a sudden, he was seized with violent shivering, to which succeeded a very high fever, during which he had alternate flexion and extension of the fore arms, and profound coma. He died in six hours after the commencement of the attack.

“Dissection the following day at 2 o'clock p. m.—Vivid injection of the whole of the arachnoid; color of the cineritious matter of the brain much deeper than natural, approaching a dark reddish grey; a little water in the ventricles. No false membrane on the arachnoid. Great inflammation of the stomach, especially towards its great curvature, which was every where of a deep, generally diffused red. Many worms in the small intestines, which presented also inflamed portions, especially where the ascarides had collected.

“Case III.—Pierre Donati, æt. 28, of a good constitution, was brought to the Hospital of Saint Esprit on the 2d August 1822.

“An hour and a half after mid-day, he was seized with an accession of fever, which commenced by excessive coldness, followed by intense heat, and stupor. He lay upon his back, with his eyes half open. He awoke when any one spoke to him, and felt

\* Entitled *Traité Anatomico-Pathologique des Fièvres Intermittentes, Simples et Pernicieuses* 1825.



again into the same state of coma. His pulse was frequent and strong; the skin burning. In the night copious sweating appeared, the intellectual faculties returned, and in the morning he was in a state to answer concerning his health. Took several ounces of bark.

"3d, The fever returned half an hour after mid-day. Commenced with a very violent coldness, followed by heat, and stupor; but nevertheless he always awoke when any one called him, and he opened his eyes. The fore arms were bent upon the arms, and could not be extended; the teeth were clenched, which prevented the state of the tongue from being seen. Sensibility of the skin diminished. He lies upon his back. There is no pain upon pressing the belly. At half past two o'clock, general perspiration, but not so abundant as the first. In the evening, return of sensibility and intelligence. Cessation of contraction of the arms. But the ideas are less clear. Other doses of bark.

"4th, The morning of the third day after his arrival, at half past 7 o'clock; the pulse was frequent; stupidity; together with a drunken appearance. At 11 o'clock, a return of the cold, subsequent fever more violent; stupor more profound, coma, return of the rigidity of the limbs; subsultus tendinum; he always lies upon his back; pulse full and strong. At half past three o'clock, sweat appeared, but less copious. After the sweat, he could not give an answer, and he was unconscious of his own state; cessation of the contractions. Died at 10 o'clock in the evening of the 5th.

"Dissection 12 hours after death.—Lively inflammation of the whole of the arachnoid; serosity between the circumvolutions, with engorgement of the vessels; injection of the vessels of the lyra. The brain being raised, there escaped half a pound of blood. Some points of a red color in the stomach and intestines; liver gorged with blood; spleen voluminous and easily torn. No morbid appearance in the chest.

"Case IV.—Francois Lauretti, shoemaker, æt. 60, of a lean constitution, fell sick on the 17th August 1822. He had the fever every day, beginning with shivering, and terminating in the night by sweating. At the same time he was constipated, and had pain in the epigastrium. Was brought to the Hospital of Saint Esprit on the 24th August. In the evening, the surface of his whole body was of a deep yellow citron color; said this color appeared during the last paroxysm; extremities cold, while he had a feeling of internal heat; tongue red and dry; pulse 108, like a thread. He had still so much recollection, that he smiled on seeing us approach him, for we had already spoken to him when he was brought to the hospital, and before he was yet put to bed. He complained of nothing, appeared quite tranquil, and replied perfectly to all that we asked him.

"25th.—In the morning he was found in a state of coma; and died at 10 o'clock, A. M.

"Dissection.—The body was of a lemon yellow color. On opening the head, the *dura mater* was tinged as yellow as the skin; by repeated washing this tint could in part be removed; but on holding it to the light, the diminution of color was scarcely perceptible; injection of the arachnoid; cortical substance of a deep color; yellowish serosity between the convolutions. On slicing the brain, a number of red points were seen; a little water in the ventricles: the cerebellum natural; the lungs healthy; the cavities of the heart appeared to us larger than usual; in the right ventricle, was a clot entirely formed of albumen, as yellow in color as that of the skin and *dura mater*. The belly, before being opened, was concave, and resting on the vertebral column; the stomach contracted on itself; it was every where of the color of ices of wine: Although it was well washed, there adhered to its surface a thick mucus, similar to the tenacious expectoration of patients laboring under pulmonary catarrh. The smaller curvature, and



a portion of the greater, presented that kind of eruption described at No. 30. When examined with a lens, it offered nothing more remarkable than to the naked eye, only instead of appearing to consist of small perfectly round elevations, and entirely separated from each other, they communicated by their bases. The redness of the stomach was less lively towards the *pylorus* but it began immediately at the duodenum, where it was very intense, and continued without interruption in the small and large intestines. The gall bladder was green externally, and filled with a black and thick bile; on pressing it strongly, only a few drops could be made to pass into the duodenum; the orifice of the *ductus choledochus* could not be distinguished, in the midst of the red, bloody, and swollen folds of the mucous membrane of the *duodenum*, but by this means. The *ductus choledochus* being opened, presented nothing remarkable, except that its mouth was drawn into the *duodenum*, in consequence of the swelling of the inflamed tissue of the latter. The liver was of ordinary consistence; its color was of the yellow of powdered bark: this is the only time I ever saw it in this state. The spleen was of the usual size, and quite diffuent.

“Case V.—Jean Oliver, æt. 40, of a good constitution, was brought to the hospital on the 6th July. He was then without fever. In the evening the fever came on, preceded by shiverings, and followed by violent heat. Pulse strong, 120; coma. He lies upon the back. Right arm immoveable. The left arm bent and carried towards the head. Sensibility every where. When an attempt is made to open the left eye, he appears to experience pain, and contracts the eyelids. Belly painful.

“7th, in the morning.—Coma; lies upon the back; pulse strong. 108. He died at seven o'clock, P. M.

“Dissection.—Injection and thickening of the *arachnoid*; engorgement of the vessels which run on the convolutions, which are separated by watery exudations; the left *lyra* greatly injected; watery effusion at the base of the brain; phlegmonous eminences in the stomach, which were of a grey slate color; invagination of the small intestines; spleen voluminous and pulpy.

“Case VI.—Vincent Orsini, æt. 60, came to the hospital the 3d July 1822, in the following state: Coma; pulse insensible; extremities cold; demi-flexion of the two thoracic extremities; when an attempt is made to extend them, a resistance is felt on the part of the flexor muscles. Left eye half shut, right eye open, pupils dilated, immoveable; tongue dry, lying in the very bottom of the mouth. He manifests pain when pressure is applied to the belly. Died the same evening.

“Dissection.—Vivid inflammation of the *arachnoid*, with great injection of its vessels. There escaped some serum, which was situated between the *dura mater* and *arachnoid*. A fibrous tumor of the size of a large nut, adhered to the *dura mater*, under the posterior angle of the parietals, and compressed the brain; although the injection of the *arachnoid* was very lively on both sides, it was, however, greatest on the left. Hydatid in the *choroid plexus*, the size of a small pea. The water that was between the *arachnoid* and *dura mater* was more abundant on the left side than on the right; brain pretty soft. General inflammation of the stomach; the S. of the *colon* was of a brownish red.

“Case VII.—Donato Fanti, a collier, æt. 50, was brought to the Hospital of Saint Esprit, in a comatose state, which continued even till death. Pulse strong, beating 80 times in a minute; when the extremities were pinched, the patient manifested pain; his skin was hot and moist; when they opened his eyes, he did not direct them to any object. It was impossible to see his tongue, because his jaws could not be separated suf-

ficiently. He only complained of pain when he was pressed in the region of the liver, and did not appear to suffer any thing when pressed on any other part of the belly.

“Dissection.—On opening the cranium several ounces of blood escaped; the arachnoid was strongly adherent to the dura mater by granulations resulting from old inflammation; the vessels of the brain were very much engorged, on slicing it drops of blood escaped from the divided vessels, which reappeared even after wiping. The liver was blackish; it appeared composed only of black blood, slightly coagulated, and of cellular bands, which alone offered some resistance to the finger: where this weak resistance was overcome, the liver was but of the consistence of thin jelly; for the blood appeared effused in its tissue, which resembled a pulpy mass. The intestines were inflamed in several points, and each inflamed portion corresponded to some knots of worms which were still alive. The lungs, the spleen, and the stomach were healthy.

“Case IX.—Joseph Totti, horse doctor, of a sanguine bilious temperament, strong constitution; was accustomed to go down every year to marshy situations, to direct the workmen in seed time, or at the harvest, which occasioned obstructions in the spleen and liver. In 1811, in the time of harvest, being then aged 40, and working with great activity, he was affected with an intermittent fever, which continued till the third paroxysm. At last he returned home; the fatigue of the journey procured for him a very short sleep. I saw him in the fifth paroxysm, when he was in the following state: Agitation; impossibility of finding a position which procured rest; pain under the right false ribs, mounting to the top of the shoulder, and extending to the left hypochondrium; pains in the articulations; head heavy; tongue covered with a white crust, bitter taste in the mouth, vomiting, thirst; face livid; pulse irregular, neither soft nor hard; great difficulty in respiring; urine red and clouded. He got an injection to loosen the belly. He had little repose during the night, for the fever returned, preceded by a general coldness over all the extremities, and the pain in his side was aggravated.

“6th day.—A frequent dry cough without expectoration. The emulsions had eased the thirst. Had no appetite. The bitter taste in the mouth had disappeared. A pound of blood was drawn from the arm, the coagulum was almost soft; the serum was livid. At the return of the fever, the cold only attacked the extremity of the feet.

“7th day.—The pain worse and worse; the difficulty of respiring still greater; frequent eructations; urine always the same. As the tongue was white, and as he had had no stools after the lavement, he took  $\frac{3}{4}$  of manna, which produced a bilious stool. In the night he had no sleep; delirium.

“He became gradually worse, and died on the fourteenth day, when in the act of raising himself to speak to his confessor.

“Dissection.—The body offered nothing remarkable but tension of the belly. In the abdomen, there was a sanious effusion mixed with a little blood. The liver was putrid and tuberculous; this affection commenced towards the convex part, extending itself on all sides, and descending towards the concave part; nevertheless, the greatest destruction was on the convexity; the rest was engorged and inflamed; its volume was natural. The gall bladder contained a little thin clear bile, not viscid. The inferior face of the diaphragm was erysipelatous; the stomach and small intestines were full of water; the spleen double the ordinary size, and of a black color; the exterior surface of the right lung was covered with a white crust, the inferior part adhered to the *pleura costalis*.

“Case X.—Dominique de Marco, æt. 30, of a good constitution, was affected with a simple tertian fever since the 24th June 1822. On the evening of the 7th July, he was seized, according to the report of his parents, with an accession of the pernicious, comatose intermittent. He arrived at the hospital on the morning of the 8th July, and

he was in the following state: Coma; decubitus on the back; face red; fore arms bent and contracted; pulse 112; convulsive trembling of the fingers; legs stretched and immoveable; sensibility every where. They made him swallow three ounces of bark in six hours.

"At 2 o'clock.—Pulse 100; sinapisms to the feet.

"9th, in the morning.—He is in a sweat; remission of the fever; pulse 88; a watchful coma; he hears, but does not answer, although he looks; two hours later, pulse 92, very full; several ounces of bark.

"Evening.—Pulse full, strong, 96; profound coma; resisting stiffness of the right arm; he cannot shew his tongue; skin hot, and always moist with sweat. To make him swallow the bark, it was necessary to pinch his nose, and hold his mouth open with a key; afterwards water was poured in, which he kept in his mouth, and finished by rejecting it. He has taken seven ounces of bark through the course of the day.

"10th, in the morning.—Pulse, 140, strong and full; coma; flaccidity; general immobility; mouth open; blood was taken from the jugular; respiration stertorous. Died towards mid-day.

"Dissection.—Injection of all the vessels of the *arachnoid*, even to the very smallest ramifications, and on both sides; but on the right side, and upon the anterior lobe, it was of an intense red, without any distinction of vessels; when it was torn away from the convolutions, the *pia mater* was also removed; it adhered so intimately to the *arachnoid*, as to resemble one membrane, red, very thick, and in the tissue of which blood was effused, which appeared immediately to coagulate; little water in the ventricles; the brain of the ordinary consistence; when it was cut, there appeared a great number of red points, which immediately became the seat of large drops of blood; the *arachnoid* of the *cerebellum* was also highly injected, the consistence of that organ was natural. Stomach grey, externally, contracted, slightly inflamed; small intestines presented two invaginations; a portion of this intestine white, transparent, distended with gas; the rest grey and contracted; in three places all the circumference of the tube is red, both within and without, occupying the space of three inches in length; all the large intestine is white, &c. &c. Liver gorged with blood; spleen weighed between two and three pounds, and reduced into a grey, pulpy state.

"Case XI.—Paul Tossini, æt. 30, of a good constitution, was taken on the morning of the 29th June with a fever, which commenced with heat, and which returned every day until the 6th July, when he arrived at the hospital. He had had thirst, bloody stools, tenesmus, enlarged spleen; and he had taken cooling drinks and a purgative. He is now in the following state: His appearance is stupid; somnolence rather than coma; general pain of head. The patient only appears to be drowsy, for he is easily awoke, and understands sufficiently well what is said to him; decubitus on the back, the knees are drawn up, but he cannot extend the thighs without experiencing pain; during his slumbers the right eye is partly open, the left shut; it is impossible to depress the lower jaw, without producing suffering; the tongue is dry, red, covered with a black crust, which extends from the point towards the middle, the breadth of which is not more than half an inch; the tongue is drawn a little to the right; at intervals, slight convulsive movements of the hands; pain of belly upon pressure; skin hot, dry, pulse 120. When the right arm is extended the flexor muscles contract, and the patient seems to suffer much pain; but when once extended it continues so.

"In the night, bloody dejections, extremely fetid; declination of the paroxysm, which returned on the 7th in the morning; at seven o'clock the patient complained of cold. I did not see him till six o'clock in the evening, when the paroxysm was beginning to decline; the skin was hot and moist; the lips were encrusted; the pulse was



not to be felt ; respiration hurried ; the two fore arms bent, when it was wished to extend them, above all the right, violent pain was produced ; preservation of sensibility, every where ; sometimes the right eye a little open, the left being shut. He had several convulsive movements this morning and towards mid-day. He took kina before the accession at the moment when he already felt the cold. Increase of coma ; died at half past seven o'clock in the evening.

“Dissection.—General injection of the arachnoid, particularly that part which covers the cerebellum and the lateral part of the commencement of the spinal marrow. The injection of the right side was a little more intense than that of the left, although it was otherwise as vivid as it is possible to imagine, for it was not a simple injection, which merely shows the smallest vessels. The arachnoid was of a deep red, as if all its tissue were penetrated with blood. The brain presented nothing remarkable. The intestines were injected in the same manner, from the œsophagus even to the anus ; their whole thickness appeared to be impregnated with blood ; they were not either thicker than natural, nor contracted ; on the contrary, they were distended with flatus. Spleen weighed from eight to ten pounds ; when it was put upon the table it became flat like a bladder half filled with water ; its tissue was reduced to a pulp.

“Case XIII.—François Pompeii, æt 19, was seized on the 1st July 1822 with an accession of fever, in consequence of a sudden chill which he experienced on entering a cool grotto when his body was covered with sweat. He was brought to the hospital on the 2d July at six o'clock in the evening. Before he arrived, he had a considerable epistaxis. He was in the following state ; profound coma, eyes widely opened, directed to the right, fixed ; expression besotted ; general immobility ; decubitus on the back ; insensibility of the extremities when pinched, they were quite flexible. He did not answer the questions which were put to him ; the direction of the eyes did not change even when one approached him. He manifested pain when his stomach was compressed ; skin burning hot ; a white œdematous swelling of the face ; his parents said that this tumefaction had come on since the disease, for previously he had rather a thin face. This access continued until Wednesday morning the 3d July ; he then took an ounce and a half of bark.

“4th July, Thursday morning.—The paroxysm returned, at the commencement of which, he could still give answers to the questions put to him, but the coma went on increasing, and with it all the symptoms above described ; the pulse was strong, vibrating, full, beating 84 ; the same direction of the eyes to the right, the same immobility of these organs, and of the extremities ; respiration short. Eight leeches to the ears ; died at ten o'clock in the evening.

“Dissection.—Several ounces of blood flowed from the nose in the dead room ; in cutting the scalp, more blood escaped ; the whole might have weighed a pound. General engorgement, of all the vessels which ramify upon the convolutions ; the brain, still covered by the dura mater, gave a feeling which made us believe that there was a fluid in the interior, nevertheless there was only a little serosity in the ventricles ; the substance of the brain was of the natural color. All the intestinal tube, without any exception, presented a red appearance, which was owing to a general injection of all the vessels, even in their smallest ramifications. It would be difficult to inject so perfectly the vessels either of the intestines or of the mesentery, as they were in this body. The intestinal tube, although a little transparent, was penetrated with this congestion throughout its whole thickness ; every thing indicated the first stage of a violent inflammation, that is to say, of a sanguineous congestion.

“Case XV.—Thomas Adami, æt. 20, was brought to the hospital on the 23d August, 1822. He was delirious ; they were obliged to secure him. After mid-day the delirium



subsided. A profound and intense coma succeeded; the pulse was strong, hard, and beat 85; the extremities were flexible, but motionless; decubitus upon the back; pupils immoveable; features swollen and intensely hot; general insensibility. Body covered with a clammy sweat. In the evening the respiration was more hurried, and very much embarrassed; pulse not to be felt; froth was discharged from the mouth; he was insensible even when his skin was pinched; died at one o'clock in the morning.

"Dissection, eleven hours after death.—General inflammation of the *arachnoid*, of which the very smallest vessels were injected; no serosity; the cortical substance was of a deep red, compared with that of a subject dead from a shivering fever, (*la fièvre algide*,) which we shall notice by and bye, &c. &c.

"Case XVI.—Antoine Turianne, æt. 12, of a good constitution, was brought to the hospital on the 23d July, 1822, at four o'clock in the afternoon. He was in the following state: Commencement of stupor, his answers are slow, and not quite correct; the questions put to him made him discontented and unhappy; agitation; he turns himself on all sides in his bed; eyes open and stupid; skin hot and dry. (Bled to 8 oz.; lavement; tisane.) In the evening, increase of stupor, in consequence of the accession of another paroxysm, coma profound, eyes open, pupils contracted and immoveable, the fore arms bent upon the arms, no pain on pressing the belly. Sinapisms to the feet.

"24th July, in the morning.—Continuation of coma; pulse 124; head intensely hot; flexion of the fore-arms; it is impossible to depress the inferior jaw. Bled at the feet to 8 oz. In the evening, remission of the fever and of the convulsive symptoms: skin slightly moist; it was necessary to pinch his nose to make him swallow ʒij. of bark.

"25th, in the morning.—Return of the fever, and the flexion of the fore-arms; continuation of the stupor; does not reply to questions; insensibility of the skin of the legs, that of the arms sensible; head intensely hot; decubitus on the back; eyes open. Boiling water applied twice to the feet; the patient did not feel it very acutely. Pediluvium during six minutes; snow applied to the head; the pulse fell to 82. Return of intelligence, he swallowed voluntarily the bark; but a little afterwards, violent agitation of all the body came on; the inferior extremities, which from the commencement were cold, were neither heated by the bath, nor inflamed by the application of boiling water and sinapisms. Of the four ounces of bark, which they made him take, he vomited more than two; neither could he retain the bark injections which were exhibited. He remained in this state till 6 o'clock in the evening; the coma returned, and he died at 7 o'clock.

"Dissection.—A very vivid injection of all the *arachnoid*; between its folds there was a membrane produced by the coagulation of effused blood; much serum between the convolutions, and at the base of the cranium; the cortical substance very red. The stomach natural; the small intestines contained a prodigious collection of worms; the inflammation was sufficiently intense in this part. The colon was contracted, its walls very thick, and the internal membrane much inflamed, of a dark red color.

"Case XXX.—Joseph Maoloney, æt. about 60, came to the hospital on the 21st Sept. 1822. He had been sick for five days. His answers were so confused, it was impossible to find out what had been his previous state, further than that he said he had vomited some bitter stuff, that he was tormented by thirst, that he had suffered great distress, and had pains in the epigastrium. In the evening, tongue dry, vividly red round the edges; constipation, nausea without vomiting, heat natural over the extremities and the thorax; a burning heat in the epigastrium; anguish; severe pain in the stomach under pressure; pulse small, frequent; lavement of barley water—gum-water—fomentations to the belly. During the night, vomiting, and had a stool.

"22d, in the morning.—Pulse more expanded; the ideas still confused, diminution of agitation, heat natural every where; tongue dry, thirst. Same treatment. About half past 9 o'clock he had vomited the tisane with mucus, bile, and several lumbrici. About half past 11 o'clock, stupidity, pains in the epigastrium increased. At 3 o'clock P. M. lancinating pain of belly; pulse small, frequent; extremities cold, and bathed in cold clammy perspiration; inferior extremities bent up upon the belly. Bled from the arm, died in half an hour afterwards.

"Dissection.—Injection of the vessels which ramify upon the convolutions of the brain; substance of the brain presented an infinite number of small drops of blood; three or four ounces of water at the base of the cranium; lungs natural, crepitating. In the belly there were fifteen or sixteen ounces of dark blood, running like oil; spleen ruptured at its inferior part, not by a fissure as in other cases, but presenting an opening the size of a dollar, out of which came a dark and putrilaginous substance; it was impossible to raise the spleen without breaking it, it was so diffuent; it separated in the hand into two portions, of which one when placed on the table became flattened like jelly, and the other portion remained attached to the diaphragm, which they were obliged to cut out to expose the spleen completely; it was not much increased in volume. The stomach was of a reddish brown in the greatest part of its extent; inflammation of all the rest of the intestinal tube; rose colored within; bladder natural; liver gorged with blood.

"Case XXXVIII.—Angelo Galetti, æt. 18, of a good constitution, was brought to the hospital on the evening of the 29th July. The patients who were near him said, that during the night, he complained continually of sharp pains in the belly. Took an ounce of bark; the whole of the body was as cold as ice.

"30th, 8 A. M.—Legs, thighs, fore arms, arms, cheeks, of an icy coldness; the belly, chest, and forehead were of rather a lower temperature than other parts of the body; pulse insensible at the wrists; I could feel it but very feebly in the crural arteries, it beat 100; the patient trembled and complained continually; his most common position was on the left side, with the thighs bent on the belly. He understood what questions were put to him, but not sufficiently well to give proper answers; he never entered into any detail; and died at half-past nine.

"Examination three hours after death.—The small intestines slightly distended with gas, were externally of a purplish red. The internal membrane was of the same color, so that the violent injection of which they were the seat, had existed through the whole thickness of the substance of the intestine. This injection was recent. Inflammation of the upper half of the cæcum. The whole of the great intestine was white externally; on being opened, it presented an inflammation, the violence of which was greater towards the rectum, where the mucus membrane was so intensely inflamed, that some blood had been effused, which mixing with the mucus formed a thick coating, which adhered to the whole of its surface. The colour of all the interior of the colon, and especially of the rectum, was of a lively, intense red: in a word, the most violent degree of inflammation that can exist without disorganization. The stomach was pale; after being washed, it presented, near the pyloric extremity, an infinity of little depressions, from half a line to a line in diameter, and some of which contained in their bottom a small spot of blood, which was easily removed. The folds of the mucous membrane were, besides nearer each other, and more numerous than ordinary. The mucous coat itself was thickened. The liver was healthy. The spleen large and pretty hard, but of a redness of the lees of wine. Slight adhesions of the right lung; the same between the whole surface of the heart and pericardium; they were easily destroyed. Injection of the arachnoid, engorgement of the vessels which ramify on the convolutions, and of those which compose the choroid plexus.

“Case XXXIX.—Vincent Crescenzi, æt. 60, of a thin but healthy habit of body, fell sick on the 19th of August, 1822. He was attacked with fever, which set in with shiverings, followed by extreme heat, pain in the head and belly, vomiting of bilious matter. During the night, the paroxysm terminated in sweating. He was brought to the Hospital of Saint Esprit on the 19th August, 1822. The fever returned in the morning, preceded likewise by shiverings, and accompanied by the same symptoms as in the evening; the stomach was painful on pressure; the patient experienced a great heat in the inside; anxiety; depressed countenance, the features were as if flattened to the bones of the face; the colour of the face was natural, the expression dull.—(Half an ounce of bark on the decline of the paroxysm.)

“Evening.—Decline of the symptoms; skin wet with a cold clammy sweat; pulse small, frequent; general shivering; pain at the epigastrium; tongue red, but moist; no thirst. (Half an ounce of bark.)

“Night.—The skin remains moist and cool. The patient has vomited the bark.

“He had several paroxysms afterwards; became worse, and died on the night of the 23d, sensible to the last.

“Dissection.—Slight injection of the arachnoid; engorgement of the vessels which ramify upon the convolutions; an effusion of yellowish serum between the foldings of the arachnoid; cerebrum and cerebellum natural; heart and lungs healthy. Stomach grey externally and contracted. Inner surface of a bright red, deeper still towards the pylorus. Foldings of the mucous membrane better marked than usual. Small intestines grey externally and contracted. Internally their redness was brighter than that of the abdominal muscles, which afforded us a point of comparison. To give an idea of this inflammation, the colour of the large intestines could be compared to that which they would receive were they soaked in black blood. This inflammation increased as it approached the S. and the rectum; liver healthy; spleen of a middling consistence, between the state of degeneration and health. This inflammation could be compared only to that of the 30th case.

“Case XL.—Vincent Cola Paolo, of Rimini, æt. 40, of a good constitution, residing at Roma Vecchia, entered the hospital on 7th July. Had been attacked with a paroxysm of fever on the previous evening. On the morning of the 7th, his state was the following:—Hands colder than those of a dead person; pulse 108, small, contracted; hiccup regular in its returns fourteen times in the minute; position supine; sighs drawn easily; answers pretty correctly, he experiences pain in the region of the liver. In the evening, the fit declined, and the hiccup disappeared.

“On the morning of the 8th, senses completely restored, with his natural expression, which, during the paroxysm, assumed that particular aspect, which characterises those labouring under the fever; but the hands have always an icy coldness which extends half way up the fore arm; he is not aware of their being cold; but on placing them on his belly, he at once becomes sensible of it; he speaks as if he were in a state of health. At nine o'clock, his appearance became as if besotted; he replied with hesitation and reluctance. Has an inclination to sigh. He lay on the side, with the legs bent upon the abdomen; the fit commenced, the cold gained upon the trunk, respiration became short, some tendency to hiccup; in short he died at three in the afternoon. He took some bark during the apyrexia.

“Dissection.—General injection of the arachnoid, which is thicker than natural, red, and as if doubled by a sanguinolent false membrane; the vessels distributed upon the circumvolutions of the brain are engorged; the stomach is much inflamed in its pyloric half, the rest of the intestinal canal healthy.



"Case XLI.—Angelo Donni, of Milan, æt. 35, weak, lymphatic constitution; preparer of macaroni. On the 5th July, 1822, he entered one of the grottos of Monte Testaccio, when he experienced a general sense of cold, which he attempted to shake off by drinking seven or eight glasses of wine; but could not however warm himself. He then felt a great weakness, which was the predominant symptom during the six days previous to his entering the hospital. His state had so little of a decided febrile character, that according to his account, the medical man could not tell him if he had had the fever. He had a sense of general uneasiness; took an emetic and a purgative, and returned to his work; but the general state of disease and uneasiness increasing, as likewise the weakness, on the 11th of July in the morning he came to the hospital of Saint Esprit, on foot, supported by a man on each side. Being arrived in the 1st ward, where I first saw him, he seated himself upon a form, and appeared to feel ill. He let himself fall down upon the right side, but the expression of his countenance was not that of a person fainting. There was something in the motions of his head, of his eyes, resembling those symptoms produced by drunkenness, and not that want of power occasioned by the cessation of the motions of the heart. He was merely supported, and recovered, and he was then enabled to ascend more than 30 steps, in order to reach the clinical ward. When in bed, the following was his condition; pulse frequent, weak; temperature of thighs, legs, hands, and arms, cold; tongue moist and not red. He was able to give a history of his previous state, nevertheless he begged the physician to question his companion, who accompanied him to the hospital, for although he had neither delirium, nor coma, nor syncope, he appeared so confused, so little master of his ideas, that he declined to give any account of it. All he assured us of was, that he had never had the fever. In the afternoon he was twice ill.

"Evening.—Pulse scarcely perceptible, great pains, extremities cold, the left hand more so than the right; it is of a livid colour. Temperature of the belly, and the chest, almost natural; face pale, delirium, agitation, inquietude. (Decoction of bark  $\mathfrak{z}$  viij. Extract of bark, theriac,  $\bar{a}$   $\bar{a}$ .  $\mathfrak{z}$  ij. Laud. liq. anod. camph. emuls.  $\bar{a}$   $\bar{a}$  gr. xx. blisters to the thighs.)

"12th July.—At half past one in the morning, sweat general and copious, but cold. In the morning at the visit, weakness the same; pulse insensible at the arms, which are cold, as also the thighs; the belly is a little warmer, but it is also below the natural temperature; pulse at the temples 114. The blistered surface pale, no water under the epidermis, which remains only detached. He has lost no part of his judgment, but manifests a tendency to drowsiness, complains of no pain, the belly is not tender on pressure; the principal ailment is great weakness. (Blisters to the arms. Bark  $\mathfrak{z}$  ij. in wine.)

"A little later, return of the same symptoms, alternating with delirium and drowsiness; general and intense sense of cold; died at half-past five in the afternoon.

"Half an hour after his death, the body was warmer than during life.

"Dissection.—Stomach highly inflamed between its great curvature and the pylorus. Intestines presenting traces of inflammation in some points. Spleen soft and pulpy, liver healthy, old adhesions of right lung. Before opening the cranium, the head was separated from the trunk, when there escaped by the occipital foramen a great quantity of bloody serum. Injection of the arachnoid in its minutest ramifications, but a little more on the left than on the right side. Great engorgement of the vessels distributed on the circumvolutions, more marked on the left side. Grey substance of the brain, of a pale, rather than of a deep hue; choroid plexus pale; serosity between the circumvolutions; brain of a soft consistence."



From these and other cases it appears, that M. Bailly found in thirty-three dissections, more or less extensive disease in the brain: in twenty-two of these there was thickening, and other marks of inflammation, in the arachnoid coat; and in eleven, inflammation of the substance of the brain. In twenty cases there was gastro-enteritis. In four cases gastritis by itself, and also four of enteritis, uncomplicated with gastritis. In eleven the spleen was softened; in some instances enlarged; one weighed from two to three pounds, and another from eight to ten pounds. In two cases the spleen was large and hardened. In three cases the spleen was ruptured, and in one it was gorged with blood. In two cases the liver was softened; in four gorged with blood; and in one case inflamed. In one case the gall-bladder was inflamed. In two cases there was pericarditis. In three, peritonitis. In one, pneumonitis. In one case there was inflammation and enlargement of the parotid.

These statements respecting the appearances on dissection in intermittent fever, will be found fully corroborated in the works of Morgagni, Pringle, Cleg-horn, Chisholm, and Fellowes.

### *Causes of Intermittents.*

In point of form, I ought now to treat of the causes of intermittent fever, but having explained myself so fully on this subject, when treating of the causes of fever in general, at page 44, it is unnecessary to do so in this place, further than to repeat my conviction, that the effects of internal irritations, sudden variations of temperature, and of evaporation, as causes producing intermittents, have hitherto been too much overlooked.

### *Pathology of Intermittents*

As there are three distinct stages in this disease, it will be proper to treat of the pathological condition of the body during each.

*Cold stage.*—Perhaps, the first link in the chain of morbid action may be in the nervous system; there is decided evidence of its being involved from the beginning to the termination of the disease. But as there is nothing to guide us in the investigation, I shall not enter into it. The first circumstance which we distinctly perceive, is diminished circulation of blood in the extremities, then a sense of coldness, and with it a feeling of weakness. These are evidences of an irregular determination of blood, by whatever cause produced; and in proportion as blood accumulates in the vessels of internal organs,\* their functions become impeded. The lungs shew their gorged state, by the short, difficult, and anxious breathing; by the impossibility of inflating them beyond the least degree; and by the violent dry cough which occasionally takes place. The livid appearance of the cheeks, lips, and mucous membrane of the mouth, is an

\* This is the state termed congestion, which implies, that the balance between the arterial and venous system is deranged for the time, the latter being overloaded or congested with blood, and not that the circulation in any organ, or set of organs, is entirely obstructed, which nevertheless does actually happen in those extreme cases in which re-action does not take place, and the individuals die in the cold stage.

additional proof of the embarrassed state of the lungs, shewing that the blood is not properly de-carbonized. The disordered functions of the brain in this stage, depend, I imagine, principally upon the gorged state of the lungs, and also upon the overloaded state of the right side of the heart, preventing the free return of blood from the head. The disordered functions of the brain may also be produced by a change in the balance of the circulation of the vessels of the head, independently of the state of the lungs and heart. The tremors may probably be attributed to congestion of the vessels of the brain and spinal marrow. The sense of cold seems to be owing partly to the state of the nervous system, and partly to the state of the lungs. The pain in the head and loins, and oppression at the præcordia, may be fairly attributed to the same causes. The muscular prostration, and feeling of sinking, are not owing to actual debility, but to obstructed action, in consequence of the above-mentioned condition of organs. The proof of all which circumstances is to be found in the fact, now well known, that abstracting blood, in the cold stage, will immediately remove not only the difficulty of breathing, the pain in the head and loins, the disordered functions of the brain, (when these exist,) the oppression at the præcordia, &c., but will also stop the rigors, restore the strength of the pulse, increase the heat of the whole body, and cause the sensation of cold to vanish in an instant. Cullen and others believed, that all the subsequent phenomena of fever depend upon the cold stage, which, although a mere hypothesis, is now for the first time proved to be true.

The pathological views which are still taught in most of the schools of Great Britain may now be stated, and this shall be done in the words of the late very celebrated professor of physic, Dr. Gregory: "The languor and debility depend upon diminished nervous energy; the uneasy feelings, on muscular debility; the paleness of the face and extremities, and shrinking of the features, are owing to spasm of the extreme vessels; the coldness is to be explained by the blood being propelled from the surface by debility, or prevented from entering the vessels by the spasm; thus the cold may be produced either by the spasm or by the debility; the tremors depend upon debility of the muscles, but there is also some irregularity of nervous energy; the breathing during the cold stage is small, frequent, and anxious, owing to debility of all the muscles that serve for respiration, while, at the same time, the *congestion* of blood produced by the weakened action of the heart, would require the breathing to be often repeated, and the respirations to be fuller than natural, which circumstance tends to increase the uneasiness; the heart partakes also of the debility; this debility of the heart produces an accumulation of blood in the great vessels, and this occasions that unusual motion of the organs of respiration, termed yawning. Want of appetite, nausea, and vomiting, are owing to debility of the fibres of the stomach. Costiveness is produced partly by spasm. Failure of attention and memory, and also delirium, are owing to debility."

On perusing these statements, the reader will observe sufficient proof of the pathological condition of the body, which I have described, but instead of attri-

buting it to the same state of organs, he places spasm and debility as the cause of each phenomenon ; thus most unphilosophically, like the rest of the disciples of the Cullenian school, he makes the facts to suit the doctrines. Influenced, as this distinguished man's mind was, by such erroneous pathology, it is no wonder that he should have pronounced the following dogma : "I have no doubt, therefore," said he, "that the causes producing fever, act first by inducing debility ; and accordingly we find, that stimulants employed at this period have produced good effects in checking this disease, while evacuations, as *blood-letting*, which, at another period of the disease, might have been proper, if employed in the *first stage*, never fail to be attended with most dangerous consequences ; or it is, to use the words of Celsus, "*hominem jugulare*."

I shall now show that this is a statement which Celsus never made with reference to the cold stage of intermittent. On a careful reference, I find no allusion made to such a practice in his works ; but in treating of the danger of bleeding in *vehement fevers*, he expresses himself thus,—"*Quod si vehemens febris urget, in ipso impetu ejus sanguinem mittere, HOMINEM JUGULARE EST.*" Lib. ii. cap. 10. It appears to me that Dr. Gregory was led into this error by a statement made by Sir John Pringle, who, in allusion to the good effects of bleeding in the camp fever which he describes, observes at page 210, (*Observations on Diseases of the Army*, Ed. 1768,) "A person unacquainted with the nature of this disorder, and attending chiefly to the paroxysms and remissions, would be apt to omit this evacuation, and to give the bark prematurely, which might bring on a continued inflammatory fever. A vein may be safely opened either during the remission or *in the height* of the paroxysm ; for besides that I have observed the remission to come sooner and fuller after hemorrhage, I have repeated experience of the safety of bleeding *in the hot fits* ; and not only in this, but in the marsh fever, even after it had come to almost regular intermissions. In order to make Celsus's maxim (he quotes the above passage from lib. ii. cap. 10,) consistent with this practice, we must interpret his terms *impetus febris* in the sense of that chillness or cold fit which preceded the hot one in the fevers which he describes, *for then indeed bleeding would be improper*." This is straining an author's statement to suit other views with a vengeance. The meaning of Celsus is clear and precise,—he makes no allusion to the cold stage. This shows how liable we are to be misled by the authority of a name.

*Hot stage*.—Acting upon the principle of not inquiring into occult causes, very little need be said respecting the circumstances which produce the re-action ; but there has long existed a pretty general belief that the blood accumulated about the heart, in the cold stage, proves a stimulus to that organ, and produces re-action. In this manner Dr. Gregory and others make the spasm of the extreme vessels the cause of the diminution of blood on the surface ; and then he observes,—"*The blood thus driven upon the internal parts, must accumulate in, and prove a stimulus to, the heart and great vessels.*"

The next question comes to be, how is this effected ? The truth is, that we know nothing of the matter ; and, after all, it is perhaps best to attribute it to



"the principles of life," or, in the language of Cullen, to the "*vis medicatrix naturæ*," which is ever in action, to prevent injury, and to remedy the evil after it has occurred. The phenomena which are ascribed to the state of re-action, are those, *the combination of which* is denominated fever; namely, hot and dry skin; quick pulse; thirst and loss of appetite; restlessness and anxiety; headache, and occasionally delirium; hurried respiration; dry, furred tongue, &c.

With respect to the heat and dryness of the skin, the old opinion of Boerhaave need scarcely be alluded to, who attributed this condition to the friction of the globules of the blood against the sides of the vessels; neither is it necessary to dwell upon the still older opinion, which attributed the heat to fermentation; nor is it requisite, after what has been previously stated in this work, to say a word more respecting spasm of the extreme vessels. The heat and dryness of the skin in the second stage of intermittent are, no doubt, owing partly to the suppression of the secretions and excretions; also, probably, to some change in the nervous system, but principally to the increased quantity of blood driven to the surface of the body.

*Sweating stage.*—it has been stated that, in general, in cases in which no organic lesion exists, the pains and uneasy feelings begin to subside after the commencement of the sweating, and soon afterwards disappear. An interesting question here presents itself: how does the perspiration produce the effect? It appears to me that it acts in two ways; *first*, cooling the body by evaporation; and, *secondly*, it moderates the force and frequency of the heart's action, by depleting the system. It is impossible to state the precise quantity of fluid perspired in such cases; but, if I can trust the hasty, and far from accurate observations made respecting this point, by placing oil-skin on the outside of the bed-clothes, I am inclined to believe that it amounts to considerably more than two pounds; and it must be kept in view, that this discharge comes directly from the blood itself.

#### *Treatment of Intermittents.*

It was formerly a matter of high dispute among physicians, whether an intermittent fever ought to be immediately cured, or allowed to run its course. Many believed that the system is benefitted by the disease,—that the febrile symptoms, in fact, are the natural cure of some other disorder in the constitution,—and they argue that curing it must be hurtful. Some still assert that the disease will cure itself; and therefore, that it is improper to apply any remedies, except laxatives, to keep the bowels open.

The best maxim in physic is, to get rid of diseased action as quickly as possible, there is no saying what mischief is to follow in the train of consequences. "There could not be a moment's hesitation," says Dr. Fordyce, "in determining to restore the patient to perfect health at once, were there any remedy or mode of treatment that would certainly prevent the returns of the paroxysms of a tertian intermittent, and take off the symptoms remaining after the crisis, so that no other disease should follow. But there most undoubtedly is no me-



dicine uniformly efficacious, or that always leaves the patient in tolerable health, and secure of not being destroyed by the remains of the disease, or by any other disorder arising in consequence of it.”—“Were there any such, why should different practitioners attach themselves to particular varieties of bark; recommending the brown, the yellow, or the red, with such decided preference? Why should they prefer arsenic or zinc, if any one were uniformly successful?”

The discovery of such a remedy has always been a great desideratum; and although no one remedy has yet been found out, I believe bleeding, in the cold stage, conjoined with the occasional use of the sulphate of quinine, and laxatives, to be as certain a mode of treating intermittents, as any other set of remedies can be said to be certain in the treatment of any other class of diseases.

*Treatment in the Cold Stage.*—As the cold stage demands different management from the hot, and both of these from the sweating stage, and all these from the intervals between the paroxysms, I shall treat of the means to be used in each stage, and then describe the plan which ought to be adopted in the intervals, to prevent a return of the complaint. In the cold stage, which generally lasts from half an hour to two or three hours, the first thing to be done is to endeavor, by every means in our power, to restore the heat of the body, and to relieve uneasy feelings, with a view to shorten its duration, and bring about re-action. Hot applications; additional bed clothes; warm drinks; stimulants; opiates and æther, have been strongly recommended,—with how little success, every experienced man can testify. The best method of applying heat is, to surround the patient with bottles filled with hot water; and it affords considerable relief when a sufficient degree of heat can be applied to the epigastric region. It appears to be more efficacious than the general warm bath, in which I have seen a patient shiver, and complain loudly of cold, when the bath was heated above 100°. It is a common plan to give a bumper of gin or brandy, with some pepper, to create re-action, and cut short the cold stage; and there can be no doubt that it has sometimes succeeded; but I have seen much injury ensue in many cases. This enables us to account for the horror entertained by the older writers, at cutting short the cold fit, because it was never at tempted by any other means than by ardent spirits, large doses of opium, and æther. Dr. Gregory used to mention, in his lectures, two cases of violent epistaxis, succeeding to doses of brandy and pepper, which reduced the patients to great weakness. In the instances which fell under my own observation, and to which I have already alluded, fever and violent cerebral symptoms succeeded, and, in two or three instances, local inflammations.

Bleeding, in the cold stage, will in a great majority of instances, cut it short; in fact, it will rarely fail in stopping the existing paroxysm, and on many occasions, it has prevented a return of the disease to which the patients had been long subject, and by which they were nearly worn out. It is difficult to determine what quantity of blood it will be necessary to draw in any given case; sometimes it requires twenty-four ounces; I have known three ounces suffice, and, in one case, an ounce and a half produced the full effect. The larger the

orifice in the vein is made, the greater is the chance of arresting the disease at a small expense of blood; but, in many cases, the operation is attended with considerable difficulty, from the convulsive tremors which affect the whole body. I was once successful in arresting the disease by bleeding, in a cold stage which had continued twenty-six hours; but I regard this as an extreme case. The blood sometimes only trickles down the arm, and, as the system is relieved, the stream becomes larger and stronger, till at last it springs from the orifice, and frequently before six ounces are taken, the patient will express relief from violent pain in the head and loins, and it will soon be observed that he breathes more freely. The tremors become slighter and slighter, and, by the time a few more ounces are abstracted, they will cease altogether, and with them will vanish the painful sensation of cold. The pulse will be found stronger, and a gentle moisture will be observed on the body. If the patient be properly managed with respect to bed-clothes, neither hot nor sweating stage will in general follow. Most of the patients who have been treated by myself, or by my pupils under my immediate inspection, have fallen asleep immediately after the operation; but some have even got up and dressed themselves.

The best testimony which can be offered in favor of bleeding in the cold stage of intermittents, is to annex a condensed history of some of the cases treated by myself and others in this country. Indeed, I have been blamed by many for not having done so in the first edition, but time has enabled me to perform this duty with more confidence, for I have now the satisfaction of adding an account of the happy results of the practice in India.

“Case I.—James Ward—admitted into Royal Ordnance Hospital in November 1823. Has had several attacks of intermittent annually, since the year 1809, when he served in the expedition to Walcheren. Of late his indispositions were long, and left him more and more debilitated. He was bled twice in the hot fit, to relieve the severity of the symptoms, and with considerable temporary relief, but without preventing or mitigating the violence of the subsequent paroxysms. He was afterwards bled from a vein in the arm, during a very severe cold stage; the rigors were violent, and the sense of cold insupportable. He complained much of his head and loins, the face was of a livid color, and the vessels of the conjunctiva turgid with blood. Pulse 100 or 105, and oppressed; breathing short and anxious, and to use his own expression, he felt “a heavy load about his heart.” When the vein was opened, the blood trickled slowly from the wound, but it soon came in a jet. When 8 ounces were taken, the rigors ceased, and he expressed great surprise at the suddenness of the relief; when 12 ounces were abstracted, he was free from all complaint, and his skin had a comfortable moist feel. He enjoyed a good night; he had no return of the intermittent; and his recovery was rapid.

“I had an opportunity of seeing this man daily for some months afterwards, and his constant tale was, that he “had not felt so well, or so much of a man,” since he went to Walcheren. The only remedies used after the bleeding were laxatives and infusion of quassia.

“Case II.—James Atkinson, aged 33, had formerly had repeated attacks of ague. Was seized with severe rigors when on the top of the Carlisle mail, travelling to Edinburgh. The paroxysm was evidently produced by exposure in bad weather, first to

rain, and then to a keen frost, with wet clothes. When I visited him in hospital, he had labored under the rigors for no less a period than twenty-six hours,—in truth, it was the most severe cold stage I had ever seen in any country, with severe pain in the head, back, and loins; oppression at præcordia. Warm drinks, stimulants, and hot applications, had been employed without benefit. The agitation of his body was so great, that it shook the very bedstead on which he lay, and threatened to terminate in convulsions. Tongue loaded, but moist; breathing hurried and laborious; pulse 65, oppressed; skin not below the natural standard over the trunk, but all his extremities were cold, and he complained of a sensation of extreme coldness. Fortunately, I made a good orifice, and the blood flowed in a good stream; the first pound was abstracted in three minutes, with very trifling relief, except to his breathing; but during the flow of the second pound, which occupied three minutes, he became more and more easy, and the rigor ceased completely. His body, and even the extremities, became of a proper temperature, and his skin felt moist; the pulse rose from 65 to 106; he passed a good night; had several stools during the next twenty-four hours, and was found perfectly easy next day. On the following day he was convalescent, looked well, asked for more food, and had no return of the disease.

“Case III.—Thomas Bullock, a strong healthy young man, reports that he had the disease in the tertian form for twelve days. Attributes it to exposure to cold when on sentry in the arsenal at Woolwich. He was in the sweating stage when brought into the hospital at Leith Fort, on the 4th March 1826.

“On the 6th had another paroxysm.

“8th.—Cold fit came on at three a. m. After it had continued half an hour and was well formed, his pulse beating 84 and oppressed, a vein was opened in the arm by Mr. Marshall, (now assistant surgeon of the 87th regiment) in the presence of several other gentlemen. When 15 ounces of blood were abstracted, the rigor ceased; the pain of head and loins, and the oppression at præcordia, vanished; the breathing became natural; the pulse rose to 95. In half an hour after the operation, said he felt quite well; no hot fit followed; a very gentle moisture appeared on the surface, but there was no sweating stage; pulse 95.

“18th.—Was again attacked with rigors a quarter of an hour before the visit. He is now in a severe well-formed cold fit; breathing hurried and laborious; the whole body is in a tremor; tongue rather loaded; passed a bad night; pulse 120, oppressed. Attributes this paroxysm to cold when in the privy. A vein was opened in the arm, and 14 ounces of blood were abstracted before the fit was subdued; there was no tendency to syncope; pulse 110, full, and of good strength. No hot stage; no sweating stage followed.

“19th—Yesterday, for some time after the bleeding, he appeared free from all complaint; but towards evening was attacked with violent head-ache and pain in the belly. Blood was again taken from the same orifice, to the amount of 12 ounces, with complete relief, since which he has been easy and slept well; bowels slow.

“20th.—Slight chill this morning, which appeared to be cut short by a warm drink; no fever followed; passed a good night; bowels not moved.

22d.—Had a slight sensation of cold this morning, but there was no hot stage, says he feels quite well; bowels slow.

“23d, 24th, and 25th.—Reports state that he went on improving.

“26th—Says he does not feel so well; but there has been no tendency to rigor; bowels bound.



"31st.--He went on improving in health, and without any return of the disease till this day. He was found at the time of the visit in a slight hot stage, after having experienced a slight rigor, which lasted for twenty minutes; tongue white and loaded.

"April 2d.—Had a severe rigor at 10 A. M. which was followed by fever and sweating; at 2 P. M. he was found quite free from complaint.

"His health went on improving gradually till the 25th, when he was discharged the hospital cured.

"The same individual reported himself sick on 30th May following, and was taken into hospital, after a severe paroxysm of intermittent. On his admission he stated, that since his discharge, his health had been very good, and his strength increasing, but that he has had three slight rigors; his appearance, however is much improved.

"31st.—Says he expects the paroxysm to-morrow morning at nine o'clock; bowels regular; appetite good.

"Was ordered to take three grains of sulphate of quinine every half hour, commencing three hours before the expected time of attack.

"June 1st.—He took six doses of the quinine; escaped the paroxysm; had no return afterwards, and was discharged on the 4th.

"Case IV.—Robert Smith, a stout man, whose health had formerly suffered from a residence in a warm climate, states, that he had had an intermittent fever five years ago when stationed at Woolwich, but has not had a return of the disease till now. Was taken into hospital at Leith Fort on 7th March 1826, laboring under febrile action, which he said succeeded to a severe rigor; the febrile symptoms continued with disturbed sleep till the 13th day, with little variation. He was then seized with a severe rigor, attended with sensations more than usually distressing; above all, he complained acutely of his head. He was bled during the cold stage to twelve ounces, when the tremors and the other symptoms ceased all at once; he soon after fell into a profound sleep, his skin having a gentle moisture; there was no hot stage.

"Escaped an attack till the 22d, when he had a severe paroxysm, followed by intense head-ache, for which he had leeches, cold applications, and a blister. He afterwards took sulph. quininæ.

"Case V.—William Macauley was admitted into the Royal Ordnance Hospital on Wednesday 31st May, laboring under a severe hot fit, attended with the usual symptoms.

"June 4th.—The paroxysm took place at 1 o'clock P. M. this day; about 12 o'clock the pulse was counted, and was found to beat 84, and oppressed; the precursory symptoms had just commenced; at half past 12 the pulse was 66, and still more oppressed. This rigor was very severe; the tremors of his body shook the bed, and his sense of cold was insupportable, at the time that a thermometer placed under the tongue stood at 100. He complained of great oppression; pain of back and loins; difficult and hurried respiration. The rigor was allowed to be formed for, 10 or 12 minutes before a vein was opened, 24 ounces of blood were then drawn, the rigor ceased, and all its unpleasant symptoms.

"He had about eight *slight* paroxysms after this, and was subsequently cured by the use of quinine.

Case VI.—Alexander Clark, a stout well-made young man with a florid complexion.

"Came into hospital at Leith Fort on 26th May 1826, with the fourth paroxysm upon him. He was attacked at 7 A. M. with rigors; the fit was very severe. The hot stage had given way to the sweating when I saw him. He could assign no cause, except that he had done duty at Woolwich a few months before. Tongue foul; fever diet.



"23d.—Was free from complaint yesterday ; had six stools from the laxative. The rigor came on this morning at half past six, and went through the regular stages with the usual distressing symptoms. Tongue much loaded ; B. regular ; no appetite ; urine scanty.

"Experienced severe paroxysms on the 24th and 26th, attended with head-ache and a severe pain in right hypochondrium.

"28th.—Rigor came on at 11 A. M. Five minutes after it was well formed, a vein was opened, but the operation was badly performed, owing to the violent tremors ; 20 ounces of blood were slowly drawn, when the rigor ceased, together with tremors, the difficulty of breathing, the oppression at præcordia, and the head-ache, &c. The painful sense of cold gave way all at once to a pleasant feeling of heat, and the pulse became natural. The bleeding was not carried the length of producing syncope. No hot stage followed, and the skin was covered with a gentle moisture. In half an hour his only complaint was of slight nausea.

"He had several slight returns of the disease, and ultimately recovered under the use of quinine.

"Case VII.—Mr. Marshall, assistant surgeon of the 87th Regiment, when on a visit in the west of Scotland, was called to see a middle aged man who had served in the army in a warm climate, and who had suffered most severely for some years from intermittent fever. Every kind of remedy had been tried in vain, and he gladly submitted to the treatment of bleeding in the cold stage, which Mr. Marshall had seen so successfully performed in similar cases. "12th.—The cold fit is very severe ; the feet cold ; heat of the superior extremities rather above the natural standard and moist ; pulse very small, not easily perceived ; pain of head excessive ; great thirst ; pain in back considerable ; complains of distressing sense of weight at the præcordia. A vein was opened, and the blood trickled down the arm, but shortly came in a full stream. When ten ounces of blood had flowed the shivering ceased, and all the bad symptoms vanished. Half an hour after the bleeding, says he is quite well. On the 14th, 16th, 18th, no return of fever." Mr. Marshall assured me that he had no return of the complaint when he last visited him, which was several months after the bleeding, and that the cure seemed to be as sudden, and apparently as permanent, as that which took place in Ward's case.

"Case VIII.—George Scott, aged 36, a native of Eyemouth, was seized with an intermittent of the quartan type when in Lincolnshire in August last. He had used various remedies, and among the rest bark, without relief. The paroxysms have continued with such regularity, that he has not escaped a single attack since the commencement of the disease. His health and strength have suffered so much, that he has been unable to work for a considerable time, and came to Edinburgh almost in despair, to seek relief. His look is meagre and emaciated ; and he appears the wreck of a strong and active man.

"On Thursday 28th December, 1826, at 2 P. M. the rigor commenced, and when it had continued for half an hour, I opened a vein in the arm, having placed him in the sitting posture ; his whole body was affected by violent tremors, his teeth chattered ; he complained of intense cold ; dimness of sight ; severe pain in the back part of the head, and in the left side, loins, and inferior extremities ; his pulse was quick and fluttering, so as not to be counted, and the countenance expressed great suffering. Owing to the violence of the tremors, a bad orifice was made in the vein, and the blood flowed slowly. When about twelve ounces were abstracted, the rigors diminished, the uneasy feelings began to subside ; and by the time 16 ounces were taken, he was free from tremor and pain, and said he felt quite well. The pulse was now a good pulse, but I

neglected to make a memorandum of its number at the time. He showed some tendency to syncope before the arm was tied up. Several gentlemen were present when the operation was performed. He was again visited in an hour, when he was found breathing naturally, in a sweet sleep. Pulse 84, and of good strength. I was told he had been very faint, and had vomited immediately after we had left the house.

“Saturday 30th—He came to the dispensary at the visiting hour, and said that he felt himself ‘a new man.’

“Sunday 31st.—He came to the dispensary again, and was there seized with a paroxysm a little after the hour of visit. The fit was preceded and accompanied by much slighter pains and general disturbance than any former attack. In about ten minutes after the fit could be said to be well formed, the rigors were very severe, the tremors violent, and the feeling of debility was so overpowering that he declared he could not support himself longer on a chair; his breathing was quick and laborious, and his teeth chattered; I tied up his arm and opened a vein, and before *three ounces* were abstracted, the paroxysm ceased, and with it all the other unpleasant symptoms. Although a minute before he had declared that he could not sit up a moment longer from debility, yet he now said he felt his strength restored, and had no wish to lie down; in less than ten minutes, I had the pleasure of seeing him running home. There was no subsequent heat of skin, and no sweating; his pulse, before he left the dispensary, was 86, and of good strength; whereas before the bleeding, it was 100, and so weak as scarcely to be counted.

“Monday; 1st January.—I sent to inquire how my patient felt; the messenger was told that he had had a good night, and was out making merry with some friends.

“On Wednesday he had a slight chill without subsequent fever or sweating; he afterwards got the sulphate of quinine, and had no more of the disease.

“Case IX.—A woman, 27 years of age, the mother of several children, experienced repeated paroxysms of irregular intermittent for several months, till at last her general health became much impaired under the disease in the tertian form. She was bled by Mr. Drever, one of my pupils, towards the termination of a slight cold stage. About 12 ounces were abstracted; neither re-action nor a sweating stage followed; and there has since been no return of the complaint, although several months have elapsed. She had neither bark, sulphate of quinine, nor arsenic. In fact, no medicines were prescribed but those of a laxative nature.

“Case X.—David Lambert, ætat. 36, sailor, residing at No. 9, Couper Street, North Leith, states that he was attacked with intermittent for the first time on the 9th May 1827, when on his voyage from Bourdeaux, in the ship *Enterprize* of Newcastle. At the time of attack they were off Dover in very bad weather, ten days from Bourdeaux. Since then the paroxysms have returned daily, the cold stage continuing for three quarters of an hour, often for upwards of an hour. It has always been severe. His general health soon gave way. He left the ship, disabled, and arrived in Leith on the 30th May. When I visited him, he appeared to be very unwell, feeble, feverish, restless, and anxious about his fate; fearful of the consequences of the approaching cold stage, which he expected in a few hours. Says he sleeps little; has constant thirst and diarrhœa; pulse 100; tongue white and loaded, but moist; has a bad cough with expectoration; slight difficulty in breathing; and constant dull pain in the chest and loins, appeared much debilitated; lies much in bed, and when he sits up complains of swelling of the feet and legs, which are œdematous; stethoscope announced bronchitis generally in both sides of the chest. The captain of the ship gave him something in treacle, which he supposed to be bark. Mr. Henbest and Mr. P. Mackintosh, two of my pu-

pils, volunteered to watch the case, with a view to bleed in the cold stage. The remainder of the history is taken from their report.

“‘June 7th.—Found him very unwell; coughing incessantly and violently; complaining of sense of weight in the chest; pain of head and giddiness; cold extremities; pulse 95, and oppressed. At 20 minutes before 8 P. M. he was seized with rigors, which soon became very severe. The breathing was hurried and laborious; his cough and other symptoms greatly aggravated. The whole body was in violent agitation, and his teeth chattered. When in this state, a vein was opened in the right arm, and four small tea cups of blood abstracted, (about 16 ounces.) He was so suddenly and so perfectly relieved, that he declared he felt quite well, his body became warm, and he soon fell into a quiet slumber. Pulse natural. After regulating the quantity of bed clothes, we took our leave.’

“‘9th.—By account had a very slight chilliness last night; the whole paroxysm being of short duration; there was scarcely any heat, and very little perspiration. In fact, he said there were none of the bad attendants of the previous attacks. He was again visited at 9 P. M. and found in the cold stage, which lasted only ten minutes. The shivering was so very slight, as scarcely to be perceptible. Passed a good night; was able to sit up a considerable part of the day; strength improved to his own feelings. The cough still continues with the expectoration. Passes dark and fetid stools. Calomel and rhubarb. A blister to the sternum. Milk and farinaceous diet.

“‘Had an attack on the 10th, and another very brief one on the 11th; from which date until the present day, June 29, there has been no return of the disease. There is no affection of the chest; his aspect and motion bespeak health, and his strength is perfectly restored, without the use of bark, quina, or arsenic.’ My reporters state, that on the 19th, the patient expressed himself in the following terms: ‘If any man had told me, twelve days ago, that I should be so well as I am now in six months, I could not have believed him.’

“‘Case XI.—Corporal Geo. Webster, Royal Artillery, has served thirteen years, three of which were in the West Indies, where he enjoyed excellent health; but since his return, has shown a tendency to chest complaints; has been once in this hospital with a bad catarrh, from which, however, he recovered. He presented himself again at the Leith Fort this day, June 24, 1827, and stated, that he had for some days past suffered from rigors, alternating with flushes of heat, and attended by pain in the loins and belly, diarrhœa, and slight nausea. His pulse was quick, and tongue loaded. He got an emetic, and daily laxatives, and was discharged on the 29th, supposed to be cured. He reappeared on Thursday, 5th July, and reported, that since his discharge on 29th *ultimo*, he had experienced three regular paroxysms of intermittent, with a day intervening; the last attack was this morning. The cold stage was very severe, and continued for two hours; it was succeeded by the hot fit, and terminated in sweating. Complained much of general pains, but suffered distressingly from head-ache during the paroxysm. He got nothing but laxatives; and had attacks on the 7th, 10th, 12th, and 14th. He escaped from the 14th till the 20th, when he had a very violent paroxysm; and on the 22d, he was bled in the cold stage, and the following report was made at the time: The cold fit severe, accompanied by violent pain in the head and belly, and and oppression at præcordia, heat 95°, pulse 105, weak and irregular, respiration hurried and difficult. When the cold fit had continued for ten minutes, a vein was opened, the blood trickled down the arm at first, but afterwards came in a good stream. When about eight ounces of blood were taken, the pains every where ceased, the tremors became slighter and slighter, and were completely stopped before sixteen ounces were abstracted. He then felt a slight tendency to syncope, and the arm was tied up. He



spoke much of the sudden and complete relief he had experienced, and contrasted his present situation with the pains and oppression he had had in previous paroxysms, which always continued till the sweating stage had gone on for a considerable time. His pulse now beat 75, strong and full, heat 100°. No hot or sweating stage followed the bleeding. Four hours after the bleeding, he was again visited : pulse 110, of good strength, skin hot from pressure of bed clothes, which were now carefully removed, to his great relief.

"23d.—Says he has not been so well since first attacked ; feels, if any thing, rather stronger, slept well, bowels open, appetite pretty good, and had no return of the disease. Had no medicines but laxatives and infusion of quassia.

"Case XII.—Bombardier James Armstrong, aged 19, is tall, spare, and pale ; says he always enjoyed good health till fourteen days before he left Woolwich, when he was seized with intermittent fever. After the first fit, he had no return for nine days, which he attributes to the use of bark, which was prescribed for him in the General Hospital. But when taking the bark, and while yet in hospital, he was again attacked, and had a paroxysm every day for four successive days. He still continued to take the bark in the intervals. He was removed from the hospital on Wednesday the 11th July, to embark with his company for Leith Fort. He escaped a paroxysm on the following day, but had one on Friday the 13th, and every day since.

"20th July 1827.—Presented himself at the hospital at Leith Fort, this morning. States, that the paroxysm came on at 7 A. M. which was very severe, particularly in the cold stage. Says he suffered most from headache, and a trembling feeling, together with a tightness at his breast. Feels now considerable prostration of strength ; has no appetite, tongue white, not much loaded ; thirst ; bowels have been very open for four or five days ; pulse 100, and full.

"22d.—Paroxysm came on at 7 this morning. Was bled in the cold stage, after it was well formed. He says the fit was very violent, and that his sufferings were produced by severe pain of head, difficulty of breathing, and tightness across the chest. Pulse so quick, irregular, and small, as not to be counted. When about an ounce of blood was abstracted, he felt much relieved ; immediately afterwards the rigor ceased suddenly, the sense of cold gave way to a comfortable feeling, and all the other painful sensations vanished ; and not more than eight ounces of blood were drawn. In the course of a quarter of an hour, said he was sensible of a little heat and slight thirst. Was visited four hours after the bleeding. Says he feels quite well, and declares he never felt so well, or so free from uneasiness in so short a time after any previous attack, and that he has no feeling of debility, which he used to have. Heat under the tongue in the cold stage was 105° ; heat taken at this visit 100°, pulse 76, full and strong. He had no stool to-day.

"23d.—At twenty minutes before eight this morning felt a slight chill, succeeded by a flush of heat ; but, to use his own words, he had "*no fever to speak of*," no sweating, and he was not ill above three quarters of an hour ; in former paroxysms, the cold fit alone lasted two or three hours, and the whole attack occupied five or six. Says he now feels uncommonly well. Appetite much improved. Took a laxative.

"24th.—Slept well, had a slight sensation of cold this morning, but no fever or perspiration. Physic operated thrice.

"25th.—Feels better and stronger. Slept well, but perspired copiously during the night. Appetite very good. Bowels regular. At the same hour this morning he experienced a slight sense of cold in his loins, but there was no general chilliness, and no heat followed.

"26th.—Had another slight sense of cold at the same hour this morning, but no heat or perspiration followed ; strength and appetite improving ; bowels regular ; slept well.



"27th.—At the same time this morning was sensible of a feeling of lassitude, but no chilliness.

"August 3d.—Continues well. Discharged to attend as an out-patient.

"10th.—Came to hospital during the hour of visit in a very severe cold stage, which had been on him for about half an hour. He complained of intense pain of head, as if some one had been beating it with a hammer, accompanied with pulsation. The tremors were violent and universal; the surface rather cold, the extremities very cold; pulse 140, and oppressed; heat under the tongue 97°; breathing hurried and oppressed, and when he attempts to take in a full inspiration, by desire, he finds it not only impossible, but makes much complaint of a pain in the left side of the chest, in the region of the heart. A vein was opened, and before four ounces of blood were drawn, the rigor diminished in violence, and the pain of head became relieved; after the loss of eight ounces, the head was quite free from pain, and the tremors subsided; the heat of his extremities was restored, and a general warm glow was felt over the whole body. When eleven ounces of blood were abstracted, he was found to be free from complaint, and the arm was tied up. Heat under the tongue at this moment 107°, and the pulse beat 126, and very full. The bleeding occupied five minutes. In about ten minutes after the bleeding, the headache became so intense that he entreated to lose more blood, and eight ounces were taken with complete relief to the head. This quantity was discharged in three minutes. His body was now universally warm, indeed rather hot; the additional blankets were removed, and he felt afterwards cool and comfortable. Pulse 120; feels drowsy.

"11th.—In an hour after the second bleeding yesterday, the headache returned, but in a much slighter degree; it was completely relieved by the application of cold water. Passed a good night, had a copious perspiration towards morning. Feels now quite well; has no pain, and says he does not feel weak. Appetite good. Had three stools last night, and one to-day.

"17th.—Has continued to improve since last report. Has had no return of the disease, and is discharged to attend for a few days as an out-patient.

"Case XIII.—John Loyd, aged 20. Has been eleven months in the service, and was three times in hospital at Woolwich with intermittent fever.

"July 27, 1827.—By account, he had regular paroxysms of tertian intermittent lately on the voyage from Woolwich to Leith Fort. When he presented himself at the hospital to-day, his countenance was much oppressed, and his gait tottering. Says he has had a rigor all night on guard, and that he has felt cold for the last twenty-four hours. Complains much of headache, pain in the loins, general uneasiness, and difficulty in breathing. Heat under the tongue 100°; thermometer held in the hand 78°. The feet and legs also cold to the touch. Pulse scarcely to be felt, and not to be counted. He appears to be between the cold and the hot stage, the cold predominating, with so much congestion about the heart and larger vessels that re-action is prevented. Upon this view of the case, a vein was opened, and although a large orifice was made, the blood only trickled down the arm, which was proved to depend on a want of sufficient force in the circulation; for when the orifice was pressed by the finger, so as to stop the flow of blood for a moment, allowing time for the vein to fill, a stream took place on the removal of the pressure; this was repeated a number of times, and with the same effect. The blood itself was thick, and coagulated imperfectly; it looked of different tints. Twelve ounces of blood were taken in fifteen minutes. The patient felt somewhat relieved after the bleeding, but complained of debility.

"28th.—Became very hot and restless in an hour after the bleeding, but has had no perspiration. Passed a bad restless night, with headache and sore throat. Pulse 106, distinct and easily compressible. Skin hot. Thermometer placed under the tongue

102°; held in the hand 99°. On looking into the throat, there appears to be no inflammation. Breathing almost natural. Is affected with slight startings. A vein was opened in the arm, and although a large orifice was made, the blood only trickled, and presented the same black appearance as yesterday; as soon as four ounces were taken, a small jet took place, which increased at last to a tolerable stream. The arm was tied up on the approach of syncope, when eight ounces were abstracted. Expressed himself much relieved by the bleeding, particularly with regard to his head. Heat under the tongue after bleeding 100°. Feels disposed to sleep.

"Vespere. Complains of headache, heat of skin, and considerable thirst. Pulse 100, and strong. Blood drawn in the morning has not separated any serum: it is like treacle, and, together with that taken at the last bleeding, has all the appearance of what the old writers called "dissolved putrid blood."

"29th.—Feels better in every respect. Slept well. No stool since yesterday morning. Pulse 100, less oppressed. Heat natural. Tongue rather foul and dry at the tip.

"30th.—Continues to feel better, and to sleep well, but complains of weakness. Three stools. Pulse 92, of good strength; great thirst.

"31st.—Complains of general uneasiness, sore throat and difficult deglutition; also of a pain in the epigastric region. He attributes these symptoms to the solution of the tartrate of antimony, which he has been taking for two or three days. The throat looks inflamed, the fauces and uvula being covered with a thick viscid exudation. Tongue dry, red round the edges and at the tip. Skin hot. Pulse 100. Thirst considerable. Bowels opened twice. Abdomen to be fomented. Antimony to be discontinued. A small dose of castor oil. Blister to the throat.

"August 1st.—Passed a bad night; but the restlessness and the troublesome symptoms described yesterday began to decline towards morning, and he now feels considerably better. Tongue moist, but discolored and dry in the centre, and in a small angular space at the tip. Skin hot and dry; pulse 98; three stools; blister rose well, and relieved the throat.

"3d.—Slept well the last two nights; feels better in every respect; but complains of his tongue, which is fissured; it is cleaner and quite moist; thirst diminished; skin rather warm; one stool yesterday, and two to-day; pulse 80, of good strength; appetite improving.

7th.—Convalescent; and able to sit up. He continued afterwards to make a good recovery.

"Case XIV.—John Boyd, aged 23. Was lately quartered at Woolwich, during a period of nine months, when intermittent prevailed, but he escaped the disease. Was seized last night, October 25, 1827, about twelve o'clock, after retiring to bed, with cold shivering, giddiness, and difficulty of breathing, which continued for three hours with great severity, and then became mitigated, but did not entirely cease. In a few hours afterwards, the rigors with the other symptoms recurred with increased violence, and continued so until I visited him at ten o'clock on the morning of the 26th October. He had no sleep during the night. Was still shivering violently, and walked to the hospital with great difficulty from extreme weakness, and his gait was like that of a drunken man. After he was placed in one of the wards, the extremities were found to be cold; heat under the tongue 95°. Respirations 38, and performed with an effort. Pulse scarcely to be felt at the wrist, beating 65. He complains of an insupportable sense of coldness; of excruciating headache between the temples; difficulty of breathing; oppression at the chest, and debility. A vein was quickly opened; the blood did not flow readily at first, although the orifice in the vein was well made. When about five ounces of blood were abstracted, the respiration was performed with more ease,

the pain of head was less, and the tremors were slighter. The blood now began to flow in a better stream, and when ten ounces were taken the patient declared he had no complaint, but giddiness and a sense of faintness. Hitherto he had been in the sitting posture, but was now placed in the recumbent, and the arm was tied up. The space of time occupied by the bleeding was two minutes and a half. The pulse was much stronger, beating 96. The thermometer placed under the tongue rose to 99. In the course of five minutes afterwards, a slight rigor supervened, with a return of the headache; and as the pulse was strong and firm, the blood was again allowed to flow from the same orifice to the extent of six ounces, with complete and permanent relief. He now felt "comfortable," to use his own expression. Pulse 80, of good strength. Had a drink of warm gruel, and in a short time a slight moisture appeared on the surface of the body.

"Vespere.—The patient was found sitting up dressed. Said he did not feel weak, and that he had been very comfortable all day since the bleeding. Surface moist. Pulse 80, strong.

"27th.—Passed a good night. Had some perspiration. A laxative powder which he took last night operated five times. The report on the 4th November states, that he feels quite well, and as strong as ever he did. Appetite good. Sleeps soundly. Bowels regular without medicine, and he has had no return of the disease since the bleeding, and on that day he was discharged the hospital.

"Case XV.—John Rose, aged 22. Has always been healthy till he had the ague at Woolwich, for which he was in hospital twice, three weeks the first time, and a month the second; but says he has since scarcely ever been free from pain of head and loins.

"October 29th.—After having experienced several attacks since the 16th October, was seized with a paroxysm between two and three o'clock this morning. At ten he was still in the cold fit; he complained of pain in the head and loins. The tremors were not violent. Tongue rather loaded, but moist. Pulse 64, weak and oppressed. Heat under the tongue 92°; in the hands 72°. A vein was now opened, and he was quite relieved before six ounces were abstracted, and the tremors ceased when twelve ounces were taken, which occupied three minutes of time. The thermometer was now again placed under the tongue, and the heat found to be 96°; in the hand 75°. There had been no application of heat, nor had any warm drink been given. There was a slight moisture over the surface. Upon being asked if he felt weaker since the bleeding, replied, that he is "not aware of feeling weaker."

"30th.—Was quite comfortable after the bleeding yesterday, so much so, that he dressed himself and sat up all the afternoon, and ate a good dinner. Slept well. Bowels open. Tongue clean. Pulse 64, and of good strength. Thinks that he feels rather weaker than he did yesterday afternoon, but says he has no complaint.

"4th November.—Continues to improve in health. Has had no return of the disease, and was discharged the hospital in the course of a week cured, having used no medicines but laxatives.

"Case XVI.—Gunner James Anderson, aged 20. Has been four years a soldier. Served in the Mediterranean for eighteen months. Had several attacks of intermittent, for which he was taken into hospital in one of the Ionian Islands; and since his return to England had two different returns of the disease. He describes his sufferings to have been always very acute during each paroxysm. Has otherwise enjoyed good health all his life. Appears to have a good constitution, and, with the exception of a yellow tinge, looks healthy. He is stout, well made, and about five feet ten inches high. By trade a weaver. A native of Glasgow.



"3d April 1828.—Presented himself this morning at the hospital at Leith Fort, laboring under all the usual symptoms of inflammatory fever, and complaining much of pain in his head and loins. Thirst is urgent. Skin hot and dry. Pulse 130, full and hard. Hard cough. Stated that he had been attacked about day-light with severe cold shivering, which, after continuing for several hours, terminated in a state of heat and fever. In the course of a few hours after admission, perspiration came on, and the urgent symptoms gradually declined as usual.

"4th.—Passed an indifferent night. Complaints of cough with which he says he has become affected since his arrival at this station on the 12th March last; that it becomes much worse as soon as he begins to shiver. After the paroxysm is over, a slight expectoration takes place, which relieves the cough till the next attack.

"The paroxysm of yesterday was the fourth, with a day intervening between each. He is aware of the nature of the complaint, and says it is the same he had in the Ionian Islands and at Woolwich.

"Continued in the same state, having a severe paroxysm every third day till the end of the month, when he complained of more than the usual sufferings. His skin became of a bright yellow color, and he was relieved by vomiting a large quantity of bilious matter.

"The attacks still continued; they have anticipated the usual time by several hours, so that the different gentlemen who went to the hospital to bleed him in the cold stage, were either too soon or too late, and no one was fortunate enough to drop in at the time, till Mr. Drever remained in the hospital all night, and he was then bled in the cold stage. The following account was written by that gentleman.

"I was called at half past one A. M. May 10th, to see Anderson, soon after the commencement of the cold sensations. At two o'clock, after the rigors had been violent for about a quarter of an hour, I proceeded to bleed him. The thermometer placed under the tongue stood at 95°. The pulse beat 130 and weak, so as to be counted with difficulty. A large opening was made in a vein, but the blood only trickled; being afraid that the opening had not been properly made, I tied up the opposite arm and made a good orifice in another vein, but the blood still only trickled; and as the rigors continued very violent, I gave him nearly a wine glassful of spirits; and in a minute or two, the blood spouted in a large stream, and thirty ounces were quickly evacuated, when vomiting and a tendency to syncope took place. The tremors had entirely ceased, and all the unpleasant sensations. The patient expressed, in strong terms, the ease which had so suddenly been produced. In five or six minutes after the arms were tied up, the tremors returned for a few minutes, and then entirely subsided. Pulse 100.

"I visited him again at the end of six hours, when he told me he had slept very comfortably. Pulse 70. Upon being asked to state the extent of the relief he experienced from the bleeding, he told me that there was a load taken from his breast and head, and no painful feeling was left."

"At two regular periods since the bleeding, he was conscious of feeling heavy and sleepy, but had no tendency to rigor, or even to feel cold, although the weather has been exceedingly changeable, and for the most part cold, the wind easterly. He has no kind of medicines but laxatives to keep the bowels comfortable.

"Case XVII.—Gunner Robert Young, aged 42. Was in hospital for several months during the winter, complaining of pain in the chest, cough, and copious expectoration together with emaciation, prostration of strength, and heavy night sweats. For four or five weeks, the expectoration was bloody, and amounted on an average to about three gills a day. His pulse was never under 100. The sound of respiration on the right side of the chest was deficient, while it was puerile in many parts of the left lung, and



there was no *r le* to be heard any where. Contrary to expectation, he became much better under the use of considerable doses of the acetate of lead; and counter-irritation produced by tartar emetic ointment to the surface of the chest. When his recovery was considerably advanced, and in order to give him the best possible chance, he was sent on furlough to his native place; and when there, was seized with intermittent fever, which induced him to return before his time had expired.

"After having experienced many severe paroxysms, he was taken into hospital, at Leith Fort, and on Sunday the 18th May 1828, the following report was made.

"Felt the cold fit coming on at half past twelve this forenoon. In a quarter of an hour the tremors were so violent as to shake the bed. From the commencement of the cold fit, he coughed incessantly, without expectoration, and complained of excessive coldness, together with pain in the head, chest, belly, and back. Heat of the room 65 . Thermometer placed under the tongue 90 ; held in the hand it fell to 76 . Pulse 75, and very weak. After the rigors had continued with violence for ten or twelve minutes, a vein was opened. The first cup, which was filled in five minutes, held twelve ounces; by the time it was half filled, the pain had vanished from the head and chest, the cough had ceased entirely. When the cup was filled, he said the pain had now left the back, and that a very warm, pleasant sensation, was gradually spreading from his back over his bowels and breast. The second cup held between eight and nine ounces; it was filled in two minutes. The blood flowed with more force, but not in so large a stream. The tremors gradually subsided, and all unpleasant sensations disappeared before the arm was tied up. The breathing was easy and natural. Heat under the tongue 93 . Pulse 92, of tolerable strength. There was no sense of sickness, or tendency to syncope. He was again visited in twenty minutes, and found quite comfortable. In the evening he continued quite well, but had a little heat of skin, which was found to be owing to the great number of blankets he still had upon him. Upon their removal the heat disappeared. As he had had free motions from his bowels through the course of the day, no medicine was ordered.

"Had a slight paroxysm on the 20th, and another on the 22d, after which quinine was exhibited, which appeared now to have the effect of preventing a recurrence of the disease, although it had been exhibited in vain, and in much larger doses, before the bleeding.

"Case XVIII.—The following is the case of James Bennett, treated by Dr. Alison in the clinical ward of the Royal Infirmary, which was the foundation of his lecture against bleeding in the cold stage, and whose objections and arguments were subsequently re-echoed in the *Lancet* of Saturday, April 7, 1827, in a communication signed "*Scotus*."

"James Bennet, aged 39, shoemaker, March 27.—Had severe rigors on Saturday 25th instant, accompanied by thirst, anorexia, and pain of head, which continued for more than an hour; were then succeeded by heat of skin, vertigo lassitude, increase of thirst, and pain of head. These symptoms continued five or six hours, and then gradually subsided during copious sweating. Had a similar paroxysm on the 26th, and also a less severe one this morning. Complains at present of slight pain below the left false ribs, somewhat increased by pressure or coughing. Pulse 60, full. Respiration natural. Skin cool. Tongue clean and moist. No thirst. Appetite pretty good. Bowels open. Urine said to be high colored. Lips somewhat swollen, with a slight vesicular eruption around the mouth. Has taken purgative medicines, and also a little of the arsenical solution since yesterday. Took an opiate draught this morning when the rigors commenced, after which they continued only a few minutes. Has since had no pain of head; little heat of skin; less thirst, and no sweating. Had the intermittent fever more

or less constantly for nine months whilst in Spain, fourteen years ago. Has recently returned from the West Indies, where he resided for the last six years. Lives in a house where several persons have been ill of continued fever.—Fowler's arsenical solution,  $\mathfrak{z}\text{i}$ . Water,  $\mathfrak{z}\text{vi}$ . Mix. Let him have  $\mathfrak{z}\text{ss}$  every sixth hour.

"28th.—Shivering commenced this morning at ten, which abated somewhat after taking the draught. At half past ten was still shivering, less violently; with pain of back and head. Pulse 72, rather small. Sixteen ounces of blood were taken, slightly sisy, crassamentum not contracted. *The pains abated and the shiverings immediately ceased.* Has headache now, and giddiness. Pulse 72, full, soft, tongue furred, moist. No sweating since the shivering. Pain of left side of abdomen only felt on coughing. No pain of back.—Continue the arsenical solution,—Repeat the anodyne draught.

"29th.—Began to sweat at two, which lasted several hours. Had griping and tenesmus with headache at night, which abated after the operation of a dose of castor oil. No shivering to day. Four doses of the solution taken. Pulse 60. Tongue moist, slightly furred. Complains of weakness.—Continue all the medicines. Let him have lb. i. of beef tea, and one pint of porter.

"30th.—Had a fit of rigors this morning about ten, and took his draught. The shivering was less violent, but lasted an hour. Pulse 80, full, soft. Heat was an hour ago  $100^{\circ}$ . Tongue slightly furred, with thirst: Complains of headache, pain of back and left side of abdomen. Bowels confined. Let him have one oz. of castor oil; a saline draught now and then. Continue the others.

"31st.—Much sweating yesterday after having had an enema at night without effect. No rigors to-day. Pulse 68. Tongue whitish.—Let him have  $\mathfrak{z}\text{ij}$ . of infusion. senna, with  $\mathfrak{z}\text{ij}$ . of sulphate of magnesia.—Repeat the arsenical solution now every fourth hour.

"April 1st.—Bowels freely opened. Rigors commenced to-day at ten, but slightly. They have become more violent within these few minutes. Pulse 84, pretty full. Skin feels warm. Tongue rather dry. Has pain of left side of abdomen just now. Has just taken the anodyne draught.—Continue the arsenical solution. Give him a powder containing four grains of sulphate of quinine every six hours.

"2d.—Shivering abated quickly after the opiate draught. Sweated much in the evening. Feels easy to-day. Left side of abdomen slightly tender. Bowels open. No nausea.—Repeat the powders of sulphate of quinine every fourth hour.

"3d.—Four powders taken. No fit. Very little pain of side.—Continue the medicines.

"4th.—Five powders taken. No fit. Two stools. Appetite good—To have four ounces of steak to-day, and daily.

"5th.—Had a very slight fit of rigors at four yesterday, succeeded by heat of skin; full, quick pulse, and sweating in the night; little head-ache, and no pain of side. Pulse and tongue natural. Bowels open—Continue.

"6th.—Shiverings have begun within these few minutes. Pulse 96. Has taken his draught. Hand rather cold. Bowels open.—Continue.

"7th.—Shivering lasted an hour yesterday. Began to sweat soon after, and sweated all night. Complains of pain in the left lumbar region, with some tenderness; no distinct hardness.

"8th.—Rigors commenced this morning a little after 9 o'clock, and lasted an hour, though he took an opiate draught containing forty drops of tincture of opium. Has sweated some already. Pulse 100, full. Complains of headache and pain of left side of abdomen. Tongue rather dry, with some thirst. No stool.—Let him take a bolus of compound powder of jalap directly. Apply the cupping glasses to the pained part of his left side, and abstract six ounces of blood. Continue the powders of sulphate of quinine. Let him have drink, acidulated with lemon juice, without syrup, *ad libitum*.

"9th.—Side easier since the cupping. Bolus operated. No headache to-day. Appetite good. Much sweating in the night.—Continue. Let him take a mixture containing  $\mathfrak{z}$ i. of sulphuric acid with water.—Additional bread.

"16th.—Had some vomiting this morning, succeeded by rigors about 8 o'clock, which lasted three quarters of an hour, but were not violent. Pulse 64. Heat  $99^{\circ}$ . Sweated a little. No headache or pain of side. Bowels slow. Let him take  $\mathfrak{z}$ ij. of infusion of senna, with  $\mathfrak{z}$ ii. of sulphate of magnesia, directly. Continue the others.

"17th.—Had a second fit of rigors yesterday at 2 o'clock, which lasted long, although he took forty drops of tincture of opium. Sweated all night. Is free from complaint to-day, but weak. Bowels open.—Continue the powders of sulphate of quinine every third hour.

"18th.—No return of shivering. Has a little pain of left side of abdomen, on motion or coughing. Pulse natural. Appetite good. One scanty stool.—Give him directly a powder containing gr xv. of rubarb, and gr iii. of calomel.

"27th.—Complains of feeling weakness of loins.—Apply a warm plaster to the lumbar region.

"29th.—Bowels slow, otherwise well.—Let him have immediately a cathartic draught. continue the others.

"30th.—Has complained of nausea and weakness, but without any shivering. Pulse natural. Tongue whitish.—Let him take  $\mathfrak{z}$ i. of a mixture containing  $\mathfrak{z}$ ij. of ammoniated tincture of valerian, in  $\mathfrak{z}$ vi. of mint water. Continue the others.

"May 1st.—Feeling of nausea and headache abated. Bowels regular.—Let him have one ounce of bark, also a warm plaster for the loins. Dismissed cured.

#### *Second attack.*

"Admitted 25th May.—On the morning of 17th instant, was taken ill with headache, languor, and pain of back, succeeded by slight rigor, which continued for about a quarter of an hour, when it was followed by heat and sweating. Has had an interval of seven days without a return of paroxysm, which re-appeared on the 24th with increased severity, the rigor having been much more violent, and of longer duration, accompanied with much nausea, excruciating headache, and those various symptoms which characterise the invasion of intermittent fever, under an aggravated form. Has had this morning, previous to admission, another paroxysm, which was an hour earlier in the period of its accession, and continued, including its three stages, for about six hours, during the first of which he had much vomiting. Complains most at present of headache, prostration of strength, general lassitude, and soreness of limbs. Has no pectoral or abdominal symptoms; thirst is urgent; no anorexia; pulse 66, full, but soft; respirations 26 in the minute; tongue furred, but moist; bowels open; skin warm, rather pungent, and bathed in perspiration; face swollen; urine copious. Has been lately a patient in this clinical ward, afflicted with his present complaint, of which he was dismissed cured, on the 30th ultimo. The history of the present case derives much additional interest from the circumstance of two of his children having been also recently attacked with ague, for which one of them is now a patient in the infirmary. Let him have grüj. of sulphate of quinine three times a-day, and two colocynth pills to-night.

"26th.—Three stools from the pills. No shivering since admission. Headache still severe. Pulse 66, full. Pain of back and limbs preventing sleep. No pain of side or of abdomen.—Apply the cupping instrument to his temples, and abstract eight ounces of blood.—Continue the powders.

"27th.—Headache relieved by cupping. Had a severe shivering fit this morning, reported to have lasted two hours, and is now sweating profusely. Pulse 66, full. No



pain of abdomen or side. Two stools.—Let him have the powders of sulphate of quinine every third hour. Also an anodyne draught, with forty drops of tincture of opium, at the commencement of the paroxysm.

“28th.—Pulse 66. Feels chilly. Bowels open.—Continue powders of sulphate of quinine.

“29th.—Had a shivering fit lasting an hour and a half, commencing at nine. Has sweated much. Pulse 66, full. Complains of general soreness. Bowels open. Had nausea, no vomiting.—Let him have an effervescing saline draught every hour. Continue the powders.

“30th.—Pulse natural. No pain to day. Appetite pretty good. Five powders taken.—To have four ounces of steak and a pint of porter.

“31st.—Took six grains of sulphate of quinine this morning at half past eight. Shivering came on at nine, and lasted about half an hour, but was much slighter. No sweating since. No headache, but complains of nausea and giddiness. Bowels open.—Let him have the effervescing saline draught now and then. Continue the powders. To have ordinary diet to-day, but the steak to be repeated to-morrow.

“June 2d.—Took a double dose of quinine again this morning at half past eight. Has had a little chilliness; no rigor.—Continue the powders.

“3d.—Began to shiver directly after visit yesterday. Took five grains of sulphate of quinine, after which it went off. Sweated much. Has complained much of *tinnitus aurium* and giddiness since yesterday afternoon. Two stools from pills taken last night. Pulse 68, full. Tongue whitish.—Repeat the powders every fourth hour; and the laxative pills at bed time.

“4th.—No shivering to day. Much less *tinnitus*. Bowels open.—Continue the powders and pills.

“5th.—Five powders taken. No vertigo or *tinnitus*. Appetite good.—To have additional allowance of bread.

“6th.—Had chilliness; no rigors. Six powders taken. Bowels slow. No pain.—Let him take two colocynth pills immediately. Continue the powders.

“7th.—No return of shivering. Complains only of pain of back.—Apply a warm plaster to the lumbar region. Continue the medicines.

“8th.—Bowels slow.—Feels drowsy to day. No shivering.—Let him have the colocynth pills. Continue powders.

“13th.—Bowels slow.—Let him take a cathartic draught.

“15th.—Two laxative pills at bed time.

“17th.—Inflammation of eyes, particularly of right, with adhesion of eye-lids in morning. No headache—Let him have  $\mathfrak{z}$  i. of compound powder of jalap immediately. To bathe his eyes frequently with tepid water, and to apply simple ointment to the edges of the eye-lids.

“18th. More inflammation of right eye.—Apply the cupping instrument to his temples. Repeat the powder of sulphate of quinine three times a day.

“20th.—Eyes still sore.—Apply eight leeches round the eyes.

“21st.—Two leeches only fixed. Bowels confined. Inflammation of eyes somewhat abated.—Repeat the leeches and purgative draught.

“22d.—Leeches bled well. Eyes less painful. Still inflamed with discharge of tears. Dissolve gr. xv. of the acetate of lead, in  $\mathfrak{z}$  viij. of water, for a collyrium.

“24th.—Both eyes somewhat inflamed, with impatience of light, and dimness of sight.—Abstract from the arm  $\mathfrak{z}$  x. of blood. Continue medicines.

“25th.—Eyes better. Bowels open.—Continue the lotion for the eyes.



“26th.—Still some pain of eye-balls ; less inflammation, but has some dimness of sight, No pain of head. Iris moves well.—Discontinue the powders of the sulphate of quinine. Apply a blister to the nape of neck.

“30th.—Still some dimness of sight.—Let him have  $\frac{3}{4}$  i. of simple ointment.—Dismissed cured.

“Case XIX.—A. B., a carpenter in Leith, had had many severe attacks of intermittent, which weakened him so much that he was almost entirely confined to bed. He had taken a great many remedies, but the disease increased in severity. Several of my pupils watched this patient in order to bleed him in the cold stage ; at length the rigor came on, and blood was drawn to the amount of sixteen or seventeen ounces, stopping the paroxysm. He experienced the same sudden relief that all the others had done from pain in head and loins, great oppression at the præcordia, dreadful sensation of coldness. This man, however, had two returns of the disease, which were owing to constant perspirations, which he encouraged, and also from allowing his bowels to get very much out of order. After a few doses of laxative medicine, and insisting on his avoiding the perspirations, he had no return of the disease, and soon recovered his ordinary state of health without any other means.

“Case XX.—James Donachie, æt. 35, pale and emaciated, applied at the Dispensary on the 10th May, 1828. States that he was at work in Lincolnshire last harvest, where he became affected with a quotidian intermittent, which continued to recur about five, six, or seven o'clock in the evening, till February last, except during his stay in the York Infirmary, and a short time afterwards. He became a patient in the Infirmary of Edinburgh, in the clinical ward. He further states, that whilst there, the symptoms ran so high that he was bled in the hot stage, but without relief. He remained in the hospital four weeks, was treated with bark, and discharged ; but was affected as severely as ever. Since about March 22, when he came out of the Infirmary, the fits have continued to attack him every evening at five, six or seven o'clock, occasionally continuing until the morning. A considerable part of this time he was under the use of Fowler's solution, without the least relief. Mr. Taylor, one of my pupils, bled him during the cold stage. Before the bleeding, his pulse was 63 ; the rigor was completely formed. Although the vein was properly opened, no blood came at first ; it soon dropped down the side of the arm, and afterward came in a jet, when the rigor instantly ceased, and the bleeding was stopped. One ounce and a half of blood was abstracted. He got a little calomel and rhubarb to keep his bowels open. His strength now increased rapidly, and he had no attack for six days, till the 16th May. During this interval he felt tolerably well, and only experienced a slight sense of chilliness and disposition to yawn, for a short time, instead of the regular paroxysm, and not every day, as before, but on alternate days, and at 1 p. m. instead of the evening. This last attack came on, as already mentioned, on Friday 16th May, while he was out taking a walk on the Castle Hill, during which he was exposed to a keen north-east wind, which prevailed at the time. He got home with great difficulty. He had another attack on Sunday 18th, which together with the former one, he describes as having been attended with a less severe cold stage, but more intense hot and sweating stages, than he had experienced before. 19th, Complains of thirst, but no loss of appetite ; surface pale ; tongue white and moist ; pulse 60, soft and compressible ; bowels regular, has no uneasiness.

“Tuesday 20th.—Had no fit, but only a disposition to stretch and yawn, with a slight coolness of the surface ; in a few minutes afterwards his skin became hot, attended with moisture on the breast and on the inside of the fore-arms ; pulse 80, soft.

"Wednesday 21st.—He had sweating yesterday afternoon after the visit ; has no complaint to-day.

"Thursday 22d.—No paroxysm, but experienced the yawning and stretching, followed by heat and sweating.

"Saturday 24th.—Escaped, and had even no threatenings till

"Wednesday 28th, when there was a slight chilliness, succeeded by heat and sweating. He had another slight attack on Friday 30th, but both these attacks were again owing to exposing himself out of doors in cold, damp weather.

"On June 2d, had a return of the stretching ; yawning ; heat ; and sweating, which continued profuse all night ; indeed every night he perspires profusely, which is not to be wondered at, when it is known that he slept with four other people in a low room, eleven feet by twelve. After this he had no paroxysm, and the only remedies which were given were the decoction of quassia, sulphuric acid, and gentle laxatives ; and he went to work on 26th June, as a laborer, with restored health and strength.

"Case XXI.—Francis Trail, æt. 26, presented himself at the Dispensary early in the beginning of May 1828, in a pale and very weak condition, with swollen features, when he gave the following account of himself : He is a native of Ireland, and went to work at the harvest in Lincolnshire in 1827 ; remained there about a fortnight ; at that time he was in the enjoyment of good health, and continued so till the beginning of last January, when he began to feel unwell at times, but still was able to continue at his work on the rail-road near Dalkeith. About the end of February he was seized with violent shivering, which was succeeded by great heat, and terminated in profuse perspiration ; the paroxysms have continued ever since in the tertian form, and he has been unfit to do any thing, his health and strength becoming very much impaired. He was bled early in the disease, in the hot stage, without any remission of his sufferings, and without preventing the accession of the regular paroxysms. The cold stage generally continued from half an hour to three quarters, and he experienced great suffering from pain in the head, and lumbar region, with sickness. On Sunday, 10th May, he was bled to 16 oz. during the cold stage. During the bleeding the rigors ceased, but afterwards a hot stage took place, accompanied with pain in the head and loins.

"On Tuesday the 12th, as he felt light and easy, and better than he had done for a long time, he walked a few miles out of town to see some friends, when he had a paroxysm, but which was not so severe as on former occasions. On Thursday he had another paroxysm, which was slight, unattended by rigors. After this period he had no cold stage, instead of which, he felt languor, headache, sickness, and pain in the lumbar region, in a slight degree ; he recovered his health and strength rapidly, and in about a fortnight from the time of the bleeding he had no complaint. He stated that his appetite was now good, his strength daily improving, and at the end of May he returned to his work cured.

"Case XXII.—Dr. Cambridge, 29th September 1827, had repeated attacks of intermittent fever at Ostend some time ago, at which place it was prevalent at the time. Since his arrival in Edinburgh, three weeks ago, he has had a daily paroxysm, and used the sulphate of quinine without effect. His appearance is far from being emaciated, but he looks pale and weakly.

"The rigor came on severely at nine this morning, accompanied by insupportable pain of head, shooting from temple to temple, inability to take a full inspiration, with sense of tightness across the chest. The rigors continued for the space of three hours, and then ceased ; but the sense of extreme coldness, and other severe symptoms continued. I was called to see Dr. Cambridge, and made my first visit at one o'clock,

when his sufferings were still unmitigated. He still felt cold. His pulse was weak and oppressed, 130 in the minute; respiration 50; face pale, and features contracted; tongue loaded, but moist. A vein was opened; immediately after the blood began to flow, he expressed in strong terms his sense of the sudden relief he experienced; at the expiration of a minute he could dilate his lungs to the fullest extent. Eighteen ounces of blood were taken, which occupied three minutes of time; and before the arm was bound up, all his uneasiness had ceased; the painful sensation of cold changed to that of a pleasant glow of heat, and the surface of the body was covered with a gentle moisture. No debility followed, and he was able to walk through the room. A brisk laxative was ordered.

“30th.—Had no heat of skin yesterday after the bleeding. His feelings were comfortable during the remainder of the day; he passed an excellent night, and felt quite well this morning up to the moment of attack. The paroxysm came on at eleven A. M. and although he shivered smartly, yet he distinctly declared that he was quite free from the cerebral symptoms, and all the other very painful feelings which had distressed him on former occasions, excepting the tightness and oppression at the chest. Respirations 36 in the minute. Pulse weak and not to be counted. Mouth slightly ulcerated, and complains of a bad taste. Tongue loaded, brown in the centre, and rather dry. Had four large, dark colored, and fetid evacuations since last night, which produced a burning sensation at the extremity of the rectum. A vein was opened, and blood was drawn, to the extent of ten ounces, which occupied four minutes of time, before five ounces were abstracted, he described, in language most poetical, his relief, which was as sudden as it was perfect. The pulse was reduced in frequency, and became much stronger, and he said he was sensible of an increase of strength; indeed, he was able to walk through the room immediately without support. In about an hour after I took my leave, the rigors returned with considerable severity, but unattended by headache, and there was little oppression in the chest. He had some fever, and a sweating stage. The sulphate of quinine was again had recourse to, and he had only one other slight paroxysm. His health afterwards improved daily, and was soon perfectly re-established.

“Case XXIII.—Dr. Cambridge informed me, that after reading my first paper on bleeding in the cold stage of intermittents, which he met with on the Continent, he had an opportunity of saving the life of a clergyman, upon whom he tried the practice, with complete success. This gentleman’s health was reduced to the lowest possible ebb, by repeated attacks of intermittent fever. He had tried bark in all its forms, and quassia and arsenic, without the least mitigation. Dr. Cambridge bled him in the cold stage, and he had no return of the disease, and his health was quickly re-established.”

I have been favored with the following case of coma, occurring in the cold stage, treated successfully by bleeding, by Dr. Henry Lucas of the Royal Artillery.

“Case XXIV.—Gunner William Smith, 9th Battalion. Admitted, August 16, 1827. is perfectly insensible; eyes fixed, pupil partially contractile; respiration slow and deep; pulse full and slow; skin cool, especially about the lower extremities. Is completely insensible to external stimuli. Was brought from one of the guard rooms, where he had been complaining of feeling ill. Had had attacks of ague. A vein was opened in the arm, and he recovered sense and motion on losing six ounces of blood. He complained of cold, though by that time the skin was warmer. Twelve ounces of blood were taken. Warm bottles were applied to the feet; cold lotion to the head; and a turpentine enema. In the evening he was found sweating. Bowels not free. Cathartic mixture ordered.



"17th.—Bowels moved once by the mixture. Pulse soft and full. Skin moist and warm. Tongue rather loaded.—Repeat cathartic mixture.

"18th.—Had distinct rigors last night, succeeded by increased heat of surface and sweating. He was discharged on the 24th, cured.

"Cases XXV. and XXVI.—The following is the extract of a letter from Mr. Brown, now assistant surgeon in the 52d regiment, dated Jersey, 8th August 1827 : "Since I had the pleasure of hearing you lecture, I have, in three instances, tried the effect of bleeding in the cold stage of intermittents, and twice with complete success. The patients were invalids, sent from Gibraltar for change of climate. One had had ague for eighteen months previous to his coming under my care ; and at the time he left the depot for Chatham, seven weeks from his being in hospital, he had no recurrence of fever. In the third case I was not so successful ; it was, I think, from the bungling manner in which I opened the vein, I could not get the blood to flow."

Cases XXVII. XXVIII. XXIX. and XXX

*"Cork, Marlborough Street.  
Wednesday Nov. 14, 1827.*

"SIR,

The perusal of your paper upon the utility of blood-letting in the cold stage of intermittent fevers, induced me to resort to that remedy, in the only four cases of the disease which I have met with since. The disease is of comparatively rare occurrence in this city, and never assumes a very aggravated form. Three of the cases I allude to were stout laboring men ; the fourth was a delicate girl about [twelve years of age. None of them presented very dangerous symptoms. The most distressing symptom was severe pain in the head, which was generally most intense during the cold fit. The loss of blood, so far from causing collapse, or adding in any degree to the feeling of debility which existed, seemed to produce quite an opposite effect. The patients expressed themselves immediately relieved, a gentle perspiration ensued, and they appeared as if revived by the influence of a generous cordial. The bleeding, however, did not effect a cure, but the subsequent attacks were infinitely more mild, and yielded in a short time to the exhibition of the arseniate of potass.

"The beneficial effects of this practice fully answered the expectations which you announce ; and I have no hesitation in saying, as far as I can judge from limited experience, that we are indebted to your sagacity for a bold and unusually successful innovation in the treatment of a disease, which has constantly baffled our best directed efforts. You will excuse this brief communication, but I am aware that no reward is more grateful to a physician, than the assurance that his suggestions have received and merited the approval of his brethren.—I am, Sir,

With much respect,

Your obedient Servant,

(Signed)

D. B. BULLEN, M. D."

To Dr. Mackintosh.

"SIR,—In consequence of having read, with great interest, your valuable paper upon the subject of bleeding in the cold stage of intermittent fever, which was published in the Edinburgh Medical and Surgical Journal for April last, I resolved to adopt your plan of treatment, in the first case of ague which should occur to me. Ague has not for many years been endemic in this neighborhood, so that the opportunities I may have of further trials of your treatment will probably not be numerous. The results of the two cases, of which I take the liberty of sending you an account, are very favorable. They occurred to me in my practice as physician to the General Infirmary here. With a strong conviction that future experience will confirm the correctness of your views



and practice, and with feelings of admiration and esteem for an individual, who has improved the practice of medicine, by a disregard to long established prejudices, and erroneous doctrines, I remain, Sir,

Your obedient Servant,

JONAS MALDEN, M. D.

Worcester, July 27, 1827.

To Dr. Mackintosh, Edinburgh."

"Case XXXI.—May 5, 1827.—Priscilla Williams, æt. 30. Complaints of pain in the head. Skin hot. Tongue furred. Pulse 120, small and rather hard. Pain in the epigastric region, with loss of appetite. Bowels confined. Has a severe rigor every other morning of half an hour's continuance, which is followed by a hot and sweating stage. Her complaints began with cold shivering, three weeks ago, in the neighborhood of Oxford, where ague was prevailing.—*Applicentur hirudines xii. regioni epigastricæ.*—*R. Extracti colocynth. co. gr. xv.*—*Hydrarg. submuriatis gr. iii.*—*Fiant pilulæ tres stat. sumendæ.*—*R. Liq. antimon. tart. ℥. xx. Potassæ nitratis gr. x. Mist.*—*Salinæ ℥ i. M Sumat quartis horis.*

"6th.—Pain in the stomach relieved. Headache continues. Bowels freely opened. No rigor yesterday.—Let her be bled during the cold stage to-day.

"7th.—Lost ten ounces of blood yesterday during the rigor, when she became rather faint. A hot and sweating stage succeeded. Bowels open. Tongue cleaner.

"8th.—Pulse 80, and of moderate strength. Headache and pain in the stomach much better. The rigor came on this morning, during which she was bled to 16 ounces, and a slight hot and sweating stage succeeded.

"9th.—Another very short and slight rigor this morning.

"10th.—Ague returned to-day, but bleeding cut short the cold stage, which was neither followed by heat nor sweating.

"13th.—Pulse 72. Tongue clean. Appetite good. Free from pain. Has had no ague since last report. Wishes to leave the hospital. Discharged.

"27th.—I saw the husband of this woman, who told me his wife was quite well, and had no return of her disorder.

"Case XXXII.—May 22, 1827. William Holland, æt. 24. Has pain in the head and limbs, with furred and dry tongue. Pulse 96, small. Bowels regular. Has severe rigors of an hour's duration every day, which are followed by the hot and sweating stages. He has great prostration of strength, and a sallow countenance, and is much emaciated. Illness began with a shivering ten weeks ago. He has for some time been wandering about the country, and sleeping in the open air at night.—*R. Hydrarg. submuriatis gr. iv. Pulveris jalapæ gr. viii.*—*M. f. bolus stat. sumend.*

"23d.—Had a rigor yesterday which lasted an hour, and was succeeded by a hot stage and profuse sweating. The pulse in the rigor was 120, and very small. The bowels have been freely opened; stools of a good colour. Headache continues.—*Fiat venæsectio dum rigor adsit.*

"24th.—Was bled to fourteen ounces during the cold fit yesterday. Whilst the blood was flowing, the shivering diminished. The hot stage followed, but lasted a much shorter time than usual. The pulse was not perceptibly affected by the bleeding.—*Sumat mistura cathartica ℥ iss pro re nata.*

"25th.—Is much improved in appearance. Pulse 80, soft. The rigor came on at the accustomed time yesterday, but the shivering was less violent. Venæsection was repeated during the paroxysm. The blood flowed freely, and the rigor ceased immediately upon tying up the arm. The cold fit lasted twenty minutes. The pulse during the rigor was 120. No hot fit followed.

"26th.—Had a slight tremor yesterday, which lasted an hour. The hot stage afterwards scarcely perceptible. Bowels open. Tongue much improved. Pulse natural.—*R. Sulphatis quininae gr. ii. Infusi rosæ ʒ i. M.*—*Sumat secundâ quâque horâ.*

"27th.—Had a short and slight shivering yesterday afternoon. No hot stage. Another at two o'clock A. M.

29th.—No return of the ague since last report. Pulse 72. Bowels regular. Tongue clean. He makes no complaint.

"June 2d.—Continues well. From this time till the 14th he had no return of the complaint. He had regained flesh and a healthy appearance, and was discharged cured."

The practice of bleeding in the cold stage has also been successfully tried by Dr. Haviland, Professor of the practice of physic in the University of Cambridge, the result of which was communicated to me, with Dr. Haviland's permission, by Dr. W. H. Yates. The following are extracts from Dr. Yates's letter: "Dr. Haviland tells me, that in consequence of your communication to the profession on the propriety of bleeding in the cold stage of fever, he was disposed to make trial of it, having, as you would expect, frequent opportunities in these low countries. His principal object was in the first place to ascertain how far it was practicable; for when he read the account, it struck him that it was a practice quite consonant with his own views. He was always assured that in these cases there existed considerable congestion of the larger vessels, and that, could a portion of their contents be *safely* removed, the general result would be good. He has since tried it in several cases with decidedly beneficial effects."

The following clinical report on the success of bleeding in the cold stage of intermittents in India, was read by Mr. Twining at a meeting of the Medical Society at Calcutta, on 5th December, 1829.

This report comprehends ten cases.

"Case I.—Was bled to 12 oz. in the cold stage of the 6th paroxysm of tertian intermittent. He experienced immediate relief, the rigors ceased, and he became hot for about half an hour; he had a slight return of fever daily at noon for six days, not preceded by rigor of cold. This patient had enlarged spleen.

"Case II.—Was bled to 14 oz. in the cold stage of tertian ague in the 4th paroxysm. The rigors soon ceased, he had a slight hot stage for about half an hour, and there was no return of the disease.

"Case III.—Was treated with purgatives, quinine and arsenic, afterwards with mercury to salivation, without benefit; bled in the cold stage of the 11th paroxysm, he felt immediate relief, and had a very short and slight paroxysm without sweating stage. A slight feverish feel remained for eight days after. At the end of 14 days, he says, he had a return of ague, and on the return of next paroxysm, after one day's interval, he was bled in the cold stage, and cured.

"Case IV.—Quotidian ague of seven days duration, purged and took bark, bled to 18 oz. in cold stage of 7th paroxysm with great relief; was exposed to cold next night, and had continued fever afterwards.

"Case V.—Tertian ague, bled to lb. i. in the cold stage of the 5th paroxysm, with immediate relief; had a short and slight paroxysm, and was cured.

"Case VI.—A most distressing tertian, with very severe rigors; bled to lb. i. in the cold stage, and cured.

"Case VII.—Irregular ague, sometimes tertian, sometimes quotidian, bled to 12 oz. in cold stage, with much benefit; he was cured, having in place of ague on the two next days of expected access, a slight feverishness.

"Case VIII.—An Asiatic, native of Madras, bled to 6½ oz. in the cold stage of second paroxysm of tertian. The rigors ceased in less than two minutes after the vein was opened, he had no fever, and was cured.

"Case IX.—Irregular intermittent, used quinine without benefit, emaciated, bled to oz. vi. in the cold stage, with immediate benefit, and no return of the disease.

"Case X.—Bled to lb. i. in the cold stage of 6th paroxysm, the cold ceased, and he had a slight paroxysm. The ague returned on its regular day, and he was bled again to oz. x. in the cold stage, which was arrested, and had no ague or fever since."

In Mr. Twining's second communication, read at a meeting of the Society at Calcutta, on the 1st of May, 1830, the following additional cases were brought forward. The next six cases are numbered in continuation from the former paper.

"Case XI.—Quotidian ague of five week's duration; the subject a woman ten years in India. Spleen tumid; had used purgatives and quinine without benefit; V. S. to oz. xiv. in the rigor on 18th December. Rigors ceased in 6½ minutes, and she had no return of the disease after V. S. Purgatives used for several days.

"Case XII.—A Mahomedan had eleven paroxysms of tertian; treated with purgatives and quinine ineffectually. V. S. to oz. 3. in rigor on 27th December, 1829. Rigor ceased in eight minutes, and he had no return of the disease.

"Case XIII.—Irregular ague in a European, from 16th Oct. to 25th Dec. V. S. in cold stage procured immediate and great relief. Had a paroxysm on 27th Dec. V. S. ad oz. 17. Rigor ceased while blood was flowing. Cured—no return of ague afterwards.

"Case XIV.—Intermittent (at first quotidian, afterwards tertian, of twenty days' duration.) V. S. to oz. ix. which shortened the cold fit, and there was no fever or sweating stage. Ague returned on 1st January. V. S. in rigor, to oz. 3. Rigor ceased in 10½ minutes. There was no fever, and very little sweating afterwards. Return of ague again on 3d January, but he did not call any one in time to bleed him. He had no return of ague after 3d January.

"Case XV.—Tertian ague of three months' duration in an emaciated subject. Cold stage very distressing, with headaches and vomiting. Had tried quinine, purges, and other remedies, with no benefit. V. S. to oz. xii. at beginning of rigor. The cold fit ceased in ten minutes, and all distressing symptoms were quickly relieved. This patient left Calcutta next day, and, as was afterwards understood, had ague on the regular day, but the medical man present refused to bleed in the cold stage.

"Case XVI.—An emaciated European, twenty-four years in India, had tertian ague for three weeks, and irregular ague for two weeks before. Rigors usually lasted three hours. V. S. to oz. x. on 10th January, after rigor had lasted near two hours; the shivering soon ceased. Slight heat, and no sweating stage followed. Paroxysm returned on 12th January, at half past 9, and he was bled immediately to oz. ix. Shivering



ceased in eleven minutes; little fever, and no sweating followed. The ague did not return. He had a slight feverishness at 10 A. M. on 15th. Purgatives were used. No relapse.

"The four next cases were Europeans, treated by Dr. M'Andrew, Surgeon H. M. 14th Foot, who has tried the treatment now described in many other patients, and has not found one in whom V. S. at the beginning of the rigor has failed to effect a cure; he has usually given three or four purges, and says he is so well satisfied with the cures, that in future he will use no other treatment. One of his patients, whose case is detailed, was cured by the first V. S. Three others required a second bleeding each.

"Six cases were furnished by Dr Berwick, Assistant Surgeon at Beerbhoom:—the patients natives of Bengal. Dr. B. observes, that natives of India may be bled more freely and with more benefit than most people suppose; he has been somewhat disappointed with quinine as a remedy for the intermittents at Beerbhoom. Four of his patients required each only once V. S.; the two others had each a second bleeding; all used purgatives.

"Five cases treated by Dr. Makenzie, in Arracan, were Asiatics. One bleeding each was sufficient to cure four of his cases; the fifth experienced great and immediate relief, and felt so well that he walked home a long distance: had a return of the paroxysm at night, and has been affected with irregular ague since; but living at a distance, has not been seen in time to repeat the bleeding.

"Four cases were treated by Mr. Bacon, Assistant Surgeon. The patients were Europeans, and he was well satisfied with the treatment. Two of his patients were cured by the first bleeding, and two others by the second.

"Four cases were treated by Mr. Kent, Assistant Surgeon, Bengal Service, who has a very high opinion of the efficacy of V. S. in the cold stage of intermittents. The whole of his patients were cured, each by one bleeding, in the cold stage. One of them was first bled in the hot stage, without much benefit: on the next paroxysm, V. S. during the rigor was resorted to, and cured the patient. Mr. K. administered purgatives according as the condition of each patient required those remedies.

"The next four cases were sent by Dr. D. Brown, Bengal Service, who has a favorable opinion of the treatment used. Each of his patients only required one bleeding; two of them used also quinine, and all of them purgatives.

"Two other cases were supplied by Dr. French, Surgeon H. M. 49th Regt. He likewise thinks favourably of the practice, and means to try it farther; but declines giving a decided opinion on such limited experience. One of his patients had the rigor cut short and the disease cured by a single bleeding; the other was bled twice, purged freely, and took quinine; the effect of V. S. on the existing paroxysm being very decisive, and affording immediate relief.

"Thus, Mr. Twining observes, the practice of eight medical men, at different stations, shews that V. S. in the cold stage of intermittents has been successful with Hindoos and Mahomedans, as well as Europeans; and of the latter several were persons many years resident in India. *Some of them were of delicate constitution, and in emaciated condition. In many of the patients, quinine and various other remedies had failed for a long time.* The early stage of rigor appears to be the best time to take blood; but bleeding in anticipation of rigor does not seem to be of any benefit. Mr. T. concludes by stating, that V. S. at the commencement of rigor appears to be fully as efficacious, and as deserving of confidence, as Dr. Mackintosh has represented; and his experience up to this time entirely corroborates Dr. M.'s good opinion of the treatment."

Several very whimsical objections have been brought forward by Professor Alison, against V. S. in the cold stage of intermittents. These were strongly



and eloquently urged in a clinical lecture by the professor, upon the case of James Bennet, which will be found at page 79 of this work. Statements made in a lecture scarcely demand notice, but as they have been published in one of the Medical Journals, it has been deemed advisable to enumerate the objections here, in order to expose their weakness and fallacy.

1st, It has been said, that *although V. S. in the cold stage does not actually produce death, as was formerly imagined, its immediate or ultimate effect must be debilitating. Even in a continued fever, when the disease is cut short by the bleeding, the effect is debilitating; but as in intermittent we may expect a number of paroxysms, the debility is still more to be dreaded in the progress of the disease.* Now this is after all only a truism; but allowing that the effect would be productive of thrice the degree of debility, yet who would not joyfully compound to cure the fever at the first onset of the disease even at such an additional expense? The cases I have already published, which were narrowly watched by a multitude, I may say, of observers, proves that this kind of debility is purely hypothetical. Not only in fevers produced by sub-acute inflammatory action of some important organ, but also in pure inflammations of the same parts, we bleed in order to produce debility, not as a matter of choice, but as choosing the least of two evils. But this term debility, is ever haunting the imagination of the Cullenians, according to whose erroneous system, not only are spasm, delirium, and the tremors, but also the oppression of the pulse, the disorder of respiration, the want of appetite, the nausea, and the vomiting, which accompany a paroxysm of intermittent, all ascribed to debility. It is no wonder, therefore, that from *a priori* reasoning, the disciples of this system should object to this practice under such erroneous pathological views. But they should recollect that I bleed only in certain cases of intermittent, not to produce debility, but to restore the balance of the circulation at as small an expense of blood as possible.

2d, It has also been said, that "*bleeding in the cold stage has generally been condemned, and probably from experience.*" I beg most respectfully to ask the Professor, by whom has it been practised, and for what reasons condemned?

3d, It has been said that it cannot be successful, because "*it attacks the effect, and not the cause, of the disease.*" Let me ask, who knows any thing of the cause of any disease which affects mankind? There is a great deal of pedantry and ambiguity concerning this term *cause*, as it is generally used in medical language. In employing it, some mean to express the agent, whether known or unknown, which actually induces the disease. For example, the application of boiling water to the surface of the body produces inflammation and its consequences. This is a known cause. An imaginary substance, to which the name of marsh miasm has been applied, is an example of the second. It is this unknown substance to whose agency intermittent fever is ascribed. Another sense in which the term *cause* has been applied is the first diseased action induced by either of the agents. It can easily be shown how very absurd this objection really is, taking it in either sense. In the case of the scald we

are called upon to treat the effect and not the cause ;—the hot water is removed, but the effect remains.

A. B. has intermittent fever ; the cold stage is long and severe ; the constitution is too much oppressed, and the patient dies ; or rather let me suppose, he would have died but that he is bled. Is it not absurd to object to the practice, merely because the practitioner is not “measuring swords” with the cause, viz. the marsh miasm, but treating the effect ? Or, A. B. has had the cold fit, and is now laboring under high excitement, and the powers of the constitution are unable to produce the sweating stage ; inflammation in the head, chest, or abdomen, takes place ; or it may prove to be a continued, remittent, or billious remittent fever ; are we not to treat the case pathologically, because we should only be attacking the *effect*, and not the cause of the disease ?

In the other sense it will be seen to be an equally erroneous objection, viz. the first diseased action produced by any agent whatever. Let me ask who can point out the first link in the chain of morbid action ? Is it in the nervous system, or in the vascular ? Both are seriously involved. If in one, how is it communicated to the other ? Who knows the structure of a nerve, and who is acquainted with its physiology ? If in the vascular system, whether is the primary diseased action in the arteries or veins, in the capillaries or the trunks, or is the blood itself affected ?

It is wholesome to put these questions home to that medical man who is too nice in investigating the occult causes of diseases. If the practice pursued by medical men were to be rejected, and condemned as being “unsatisfactory and unscientific,” (as V. S. in the cold stage has been by Dr. Alison,) because they treated the *effect* and not the *cause* of the disease, I fear the profession of medicine would soon be at an end, and its professors left in a more miserable plight than Shakespeare’s poor apothecary. Upon this principle, it is unsatisfactory and unscientific pathology which leads us to bleed, blister, and give purgatives for the cure of any disorder, because we are treating the effect, and not the cause of the disease.

4th. Another objection has been made, *that bleeding in the cold stage is only, to say the very best of it, “a palliative remedy.”* Does not a similar objection apply to bark and arsenic ? “It may, however, be remarked,” (says Sir James Fellowes, at p. 382,) “that, in taking a review of the general practice in intermittent fever, the means usually adopted appear to have had no other view than to lessen the inconvenience of the paroxysms, and that they have not always been sufficiently active to put a stop to the disease in a way that was satisfactory to the patient or to the practitioner.” To say the very worst of it, therefore, the practice does not stand on weaker ground than the other remedies. I have seen much mischief done by the use of bark in aguish districts ; and I have known one man killed by arsenic. Clark (on Long Voyages) mentions a similar accident, but I have as yet known nothing but advantage to proceed from bleeding in the cold stage. I wish not to be understood to mean that bark and arsenic will always produce bad consequences, or that

bleeding in the cold stage will invariably prove beneficial. I am convinced that both kinds of remedies require sound judgment in their application ; and that if there is any organic engorgement or alteration of structure, bark must be injurious, if it has any effect at all, and that this is one of the cases likely to be benefited by bleeding in the cold stage.

5th, This practice has also been objected to, forsooth, *because it is a "mechanical remedy."* It is said "to affect the powers which move the blood, but it cannot affect the altered state of the blood itself." That it does affect the powers which move the blood is a fact which cannot be denied, and this is precisely one of its great advantages. But to say "that it cannot affect the altered state of the blood," is a mere assertion. I maintain that it does also affect the altered state of the blood. Without entering into the physiological controversy about the nature of the changes which the blood undergoes during its circulation through the lungs, I may content myself with stating the fact, that some change necessary to life does take place on the blood in the lungs. From the commencement of the cold stage, the condition of the respiration decidedly proves that the functions of the lungs are much embarrassed. It is not even necessary to inquire into the cause of the pulmonary distress. They cannot perform their functions ;—does it not therefore follow that the blood cannot undergo the usual and necessary changes ? The blood is in a morbid condition, and when taken from a vein in very severe cases, it looks black and does not coagulate. Under such circumstances, when bleeding is had recourse to, it relieves the circulation, unloads the vessels of the lungs, and thereby enables them to perform their functions ; the blood is acted upon, and the usual changes are effected. Therefore this "*mechanical remedy*" does also affect the altered state of the blood.

But there is another interpretation of the expression, "*altered state of the blood.*" It may relate to a supposed alteration produced on the blood by the morbid agent, the marsh miasm ; and I have no doubt this is the sense intended to be conveyed. In the first place, I may remark we know nothing whatever of this marsh miasm ; we assume the existence of such a substance ; and, as has been already stated, some have even ventured to give it sensible qualities, as smell and specific gravity. This is certainly going quite far enough in mystery and darkness ; but to say it directly affects the blood is a gratuitous assertion well becoming a true Cullenian, whose whole system of physic is founded upon, and carried on from page to page by, the most erroneous and the weakest assumptions. This has always been my great objection to this system. Its author lost sight of the true Hippocratic maxim in the investigation of diseases. Cullen declared that there "are more false facts in medicine than false theories;" and on one occasion he asserted in his lectures, that what were called "medical facts were nothing more than medical lies." It will be seen, that whenever Cullen came to a difficulty, instead of waiting patiently for an accumulation of facts to enable him to investigate all its bearings, he made a leap over the obstacle by assuming a certain thing for a fact. He established a system of



special pleading, and a symptomatic pathology, which have been exceedingly injurious to medical investigations; and it will soon be generally acknowledged that his labors have retarded, rather than advanced, the science of medicine.

In conclusion, I wish to impress upon the minds of my readers, that by V. S. in the cold stage of intermittents, we stand upon vantage ground, by affording our patients the benefit of the following circumstances:

1st, The injury which in many cases results from the continuance of the venous engorgement, which so constantly leads to organic diseases, is avoided.

2d, The danger proceeding either from the want of sufficient re-action, or from its excess, is also avoided.

3d. The practice prevents debility, in a direct manner, by saving the vital fluid.

4th. The chance of a return of paroxysm is diminished; or if it should recur, the force of the attack will in general be weakened; and in that case a most important point will be gained, by affording an opportunity for the administration of other remedies, as bark or arsenic, which might previously have been exhibited in vain.

5th, Experience has also taught me, that bleeding in the cold stage is far more efficacious than bleeding during the hot stage, or in the intervals. Several cases are quoted, in which bleeding was had resource to in the hot stage to moderate threatening symptoms, but without preventing a return of the disease at the regular period; and in these same instances, bleeding in a subsequent cold fit, had the effect, not only of stopping the existing paroxysm, but of preventing its return.

If any other evidence were wanting to shew the advantage of a radical change in the treatment of intermittent fevers, it will be readily found by contemplating the results which befell one of the finest armies Great Britain ever sent from her shores, and which went to Walcheren on the 5th July, 1809. The prevailing disease was intermittent fever, and in the course of six weeks, 8000 sick, were sent to England, and 3000 more soon followed. While seven officers and ninety-nine men were killed in action during the whole campaign, we find that forty officers and 2041 men died from disease. It is further stated in the official returns laid before parliament, that several months after the return of the army, there were on the sick list 217 officers, and 11,296 men!

A curious and an interesting fact was communicated to me by Dr. Foot, (who served with the 17th regiment in India,) when he did me the honour to attend my lectures,—that some Persian physicians apply ice to the surface of the body in the cold stage of intermittents, and, it is reported, with good effect. I have also heard that it is a practice with some in India, to use the cold affusion.

It is proper, also, to mention the plan of preventing the paroxysm upon the first appearance of its approach, by applying tourniquets to the extremities, which was first noticed by Dr. Kellie, in the 1st and 2d volumes of the *Annals of Medicine*.\* The tourniquets appear to act, by confining the blood in the extremities, and preventing so much at least of the congestion in internal organs.

\* This curious remedy is mentioned by Boisseau, p. 523, as if it were the original invention of Lallemand.



*Treatment of the hot stage.*—The best treatment which can be pursued in the hot stage, is, to remove the bed-clothes as far as the season and the patient's feelings will admit; to sponge the extremities with water; to use cold drinks; and, in fact, to employ every means which can diminish the temperature of the body. If there be symptoms of local inflammation, bleeding is to be had recourse to, either general or topical, which has always been employed, by judicious practitioners, under such circumstances. I need not speak of febrifuge and diaphoretic mixtures, which are very good for the druggist, will assist in filling the pockets of the routine practitioner, and suit the notions of a symptomatical physician. It is more than doubtful, whether such medicines ever diminished the violence, or shortened the duration, of the hot stage of an intermittent.

*Treatment in the sweating stage.*—When the sweating stage commences, it must be encouraged until the uneasy feelings are relieved, or at least mitigated. Great injury is done by allowing patients to perspire longer, by which they are not only unnecessarily weakened, but the subsequent paroxysms of the disease are in general rendered more violent. The best way of arresting this stage, is, to change the linen, after drying the patient carefully with towels, and to place him on a couch. A second paroxysm has been frequently traced to a chill, occasioned by the coldness of the damp clothes, towards the termination of the sweating stage. Should there be no marks of any local inflammation, the patient may be offered light nourishing food, and even wine if necessary.

*Treatment during the interval.*—The first thing to be done, is, to determine whether or not there exist any local disease, and if so, what is its nature and seat? Medical men have hitherto deceived themselves very much by treating this disease, as well as many others, merely from its name; because it is intermittent fever, bark must be prescribed? Another error into which they have fallen, is, that they imagine the only organic lesions which take place exist in the liver and spleen, whereas the brain and the lungs suffer, perhaps, more frequently. I have seen fatal affections of the heart also arise in the train of consequences from intermittent fever. Bronchitis is also of frequent occurrence. These facts are stated from my own experience; and, except the last respecting bronchitis, they are fully proved by the cases and dissections recorded by M. Bailly, as well as by the facts which are to be found in the works of Pringle, Cleghorn, Chisholm, and others.

If any organic disease exist, bark will be injurious, until it be either mitigated or entirely removed. Sir James Fellowes (Reports, page 350) states, that the dissections of those who died, discovered to us a series of morbid appearances of which we had no suspicion, and they enabled us to account for many of the phenomena of the complaint, and to form a more rational plan of treatment than that which we had at first adopted. M. Bailly came to the following practical conclusion, that he bled, to dispose the system to receive the action of the bark, and that he has suddenly, by such means, subdued intermittent fevers, which had previously resisted all other means; and he assures us, at page

366, that although he would not altogether prescribe bark, yet he believes that bleeding alone, in most cases, above all, in our climate, would bring about a more substantial recovery. He also makes a very strong statement at page 375. "In the commencement of an intermittent fever, (says he,) one is almost always sure to destroy it by a large bleeding;" and he shews that this disease is not so fatal to poor, debilitated subjects, as to those who are better off, and better fed. For example, the mortality at Rome, where great misery prevails, is 1 in 26 of the whole population; whereas, in the marshes in the neighbourhood of the Sienne, the mortality is in the enormous proportion of 1 to 10 of the whole population. He also assures us, at page 383, that we are not to dread debility; that those patients who were bled by himself abundantly, and at short intervals, not only were not depressed by this debility, but acquired in a few days a state of strength and health which they had not known for a long time. Had this distinguished author been aware of the safety and success of my plan of bleeding in the cold stage, he would not have made the complaint, that in the worst intermittents, that is to say, those in which the patients died in the cold stage, he had "not time to employ bleeding." Speaking of the advantage of bleeding in this disease, he says at page 383:—"Car j'en excepte toujours les fièvres intermittentes pernicieuses, dans lesquelles on n'aurait pas le temps d'employer la saignée, si on ne se rendait pas maître de mouvement nerveux par ce précieux anti-périodique."

It is in such instances that the great advantage of bleeding in the cold stage is most apparent. In some of M. Bailly's cases, stimulants and bark, in considerable quantities, were given without benefit, and in the majority the pulse is described as having been strong.

Bark has been long in use, and although I never denied that it had virtues, yet, when given in substance, in the large doses which are admitted to be necessary, I have so frequently seen it do mischief, that the question has often suggested itself to me, whether it was not more injurious than beneficial? It seems to be injurious, in many cases, by overloading the stomach and bowels with indigestible ligneous fibre, and I have seen it cause serious intestinal irritation, as displayed by griping pains in the bowels, diarrhœa, and painful tenesmus. On examining the stools in these cases, they seemed chiefly to consist of bark, with a considerable quantity of mucus, occasionally tinged with a little blood. That preparation of bark, which is known by the name of the sulphate of quinine, is the greatest improvement in modern pharmacy, and the knowledge of its beneficial effects in simple intermittents, affords sufficient proof of the virtues of the substance from which it is extracted; yet this remedy, all-powerful as it is, is useless in the cold stage, and must also fail in cases complicated with organic disease. Dr. Fordyce, who had great experience in the treatment of this disease, states, that, "in many cases of perfectly regular tertians, the most skilful practitioners have been baffled in the use of Peruvian bark, and every other medicine recommended as useful in this disease." My youthful readers may rest assured, that the same observations are

equally applicable to the sulphate of quinine; yet they will meet very probably with many practitioners, who will assure them that they have never seen a case, in which bark, exhibited in substance, or in any other form, has failed in their hands. When they hear such statements, they may be satisfied that such practitioners never met with a severe case, or that there is some subterfuge. Some medical men, it is but charitable to suppose, are in the habit of deceiving themselves; for I have heard of many who allege they cure every case of fever, and every case of inflammation, by brandy, port wine and beef-steaks; and that the patients are to be regarded as in no danger, if they can be only got to swallow plenty of these articles. They also state that they carry lancets in their pockets, but they never use them. The sensible part of the profession regards any man as a quack, or an impostor, who asserts such universal success in the treatment of fevers and inflammations, and particularly by such means.

Those who are young in the profession, may rest satisfied that no means hitherto devised can be universally successful; and the cases have been already pointed out, in which the sulphate of quinine may be expected to be beneficial, as well as those in which the same happy result is not to be looked for. It cannot be too strongly impressed upon the mind, that experience has taught me to beware of any preparation of bark, while the patient has fever, or complains of oppression at the præcordia.

Sydenham's recommendation of prescribing bark in the intervals, has been supported by subsequent experience. Bark is given in substance, in decoction, infusion, and in extract; but no one who has seen the superior efficacy of the sulphate of quinine, will, I am persuaded, if he can obtain it, ever use bark in any of the other forms. With respect to the doses of quinine, Andral states that Lerminier has prescribed it in a very great number of cases, in two doses of three and four grains each, with an interval of half an hour, four or five hours before the paroxysm. And he assures us, that given in this manner, it has almost always cut the fever short. In some cases, the fever has been equally prevented, by the exhibition of the quinine twelve or fifteen hours before the paroxysm. Once the quinine was given by accident in the middle of the cold stage, and that paroxysm was neither weaker nor more intense than the preceding one. The greater part of those individuals who took the two doses of three grains each, had slighter paroxysms than before; but the fever was not suddenly cut short, as it was in those who took the two doses of four grains each. He also states that in two cases the sulphate of quinine did not subdue the fever till the dose was increased to twelve grains; and Larminier gave three individuals twenty grains each during the day, stopping the fever without producing any accident. But with several other patients, to all appearance in the same circumstances with the preceding, a few grains of the sulphate of quinine created troublesome nervous symptoms, such as violent palpitation of the heart; oppression; the globus hystericus; general uneasiness; flying pains in different parts of the chest and abdomen.\*



The manner in which I have prescribed quinine, is to give three doses of five grains each, with half an hour of interval immediately before the expected paroxysm; or three grains every half hour, beginning about three hours before the expected paroxysm. I have taken three and five grains, without feeling any thing unusual, and I afterwards ventured upon ten, but a violent headache followed, which continued for nearly three days; I have given ten grains, however, to others, on two or three occasions, without producing any such effect.

Arsenic has been long in use in intermitten fever, and there can be no doubt that it has often proved serviceable. Fowler's solution is the preparation now in general use, under the name of *liquor arsenicalis*; the dose is from two to twenty drops twice or thrice a day. Other tonics and bitters have been recommended; the best of these is the infusion of quassia. Opiates have been exhibited, immediately before an expected paroxysm, sometimes with benefit, but they generally produce violent headache. Laxative medicines, to keep the bowels open, form an essential part of the treatment; and in general, the stools should be examined. I have met with cases which resisted every remedy, till it was ascertained that the patients had given erroneous accounts respecting the number and appearance of the stools; and upon the bowels being put in proper order, the disease has given way without further trouble. From the idea that intermitten fever is a disease of debility, many practitioners give nourishing and stimulating diet, with wine, in all cases; but after the pathological account which I have given, and the appearances found on dissection, a word more need not be said to shew the impropriety of such conduct. In some instances it is beneficial, where there is no local disease, in others it must prove prejudicial. The patient should be clothed according to the season of the year, and the temperature of the climate. He should avoid exposure in bad weather, and particularly in our climate during the prevalence of easterly winds, and keep to the house after sunset, till he be sufficiently recovered.

---

### REMITTENT OR YELLOW FEVER.

This is a fever in which there are remarkable remissions, which are followed in a few hours by exacerbations; so that it bears some resemblance to an intermitten. This circumstance has led Cullen to identify them; and in his definition of intermittents it will be observed that he has embraced remittents also,—of the last he gives no separate definition. Remittent fever is a disease of warm climates, and when the skin is yellow it has obtained the name of Yellow Fever. The milder forms depend upon general functional derangement, which runs more quickly into disease of structure than is observed in the fevers of this country. Remittent fever has a very wide range of character; modifications of the complaint occur without end, according to the organ or organs affected, the character of that affection, the constitution and habits of the patient, and the locality of his place of residence. In its severest form, the



viscera of the three great cavities are implicated from the first onset of the disease, and there is no complaint in which the appearances on dissection may be so truly predicted.

*Symptoms.*—The disease begins, sometimes with great excitement and without rigor ; on other occasions, the rigor is severe. Generally speaking, there is some previous indisposition, such as headache and giddiness ; want of appetite ; symptoms of indigestion ; oppression at the præcordia ; constipation of the bowels ; a feeling of debility and fainting ; but of all these, oppression at the præcordia, some degree of giddiness, headache, and constipation of the bowels, are the most frequent premonitory symptoms. Sometimes it happens that the patient dies before re-action takes place, but this is comparatively rare ; sometimes cases occur where the seizure is sudden and unexpected,—the patient is struck down, as it were ; he loses his senses ; irritability of the stomach soon appears ; black vomiting ensues, and he is carried off in the course of thirty-six hours. “It often occurred,” says Dr. Fergusson, “to a well-seasoned soldier, mounting the night-guard in perfect health, to be seized with furious delirium while standing sentry, and when carried to the barracks to expire in all the horrors of the black vomit, within thirty hours from the first attack.” This, it must be confessed, is the most severe form of the disease.

There are many varieties, concerning each of which it is impossible to treat in a work like the present. The most frequent form of the disease, is that in which, after the rigor, which may be more or less severe, there quickly succeed violent re-action, heat of skin, and determination to the head, announced by the following well-marked symptoms ; flushed face ; conjunctiva injected, the eyes look heavy, and often feel burning ; the expression of the countenance often leads an experienced person to judge correctly of the severity of the attack. The respiration is hurried and frequently laborious, often attended by cough, and the patient occasionally sighs, and seems to gasp for air. The head is thrown about from side to side ; and the patient is excessively restless from anguish. Severe darting pains in the head are sometimes complained of, as also in the small of the back and down the thighs. There is sometimes a burning pain in the pit of the stomach ; exquisite tenderness in the right hypochondrium ; unquenchable thirst, with incessant retching of every thing taken into the stomach. The fluid ejected is mixed sometimes with a great deal of bile, and accompanied with a discharge of flatus, belched up, with great violence. The pulse is various even in people similar in age, constitution, strength, and habits ; but in plethoric subjects who are seized soon after their arrival in warm climates, the pulse is quick, full, and bounding for a few hours at least, after the re-action is fully developed. In some it is quick and not strong, and in others it is not particularly quick, and it is sometimes very irregular. The tongue is furred, perhaps red, but soon becomes parched and dark colored.—These symptoms indicate the first stage of this fever. An anxious and distressed countenance, redness and sense of heat in the eyes, flushed face, intense headache, quick or laborious respiration, burning pain in the region of th

stomach, with great thirst and excessive vomiting, announce a formidable disease; but, in my opinion, not so formidable and hopeless as another variety, in which there is some insensibility from the first, with coma, weak and oppressed pulse, and cold extremities.

The duration of the first stage is very uncertain. In severe cases it lasts from twelve to eighteen hours, but in those which are slighter, it may go on for three, four, or five days.

In the second stage the skin and eyes acquire a yellow tinge; the heat subsides; the head is confused, or delirium appears; the breathing becomes quicker and more anxious; the eyes begin to look glazed; the pulse sinks; the retchings are rather more violent; the matter vomited becomes thicker and begins to look dark; and if the person be sensible he desponds; he occasionally falls asleep, but instantly awakes in great terror; sometimes he starts out of bed furiously delirious, but instantly falls down in a tremor upon the floor; the tongue is always parched, and in general covered with a dark fur; and the skin becomes clammy. In this stage as well as in the first, there are often cramps in the belly and legs, which distress the patients much. The duration of this stage is also uncertain.

The first stage sometimes terminates by a remission of the more urgent symptoms, when the patient and his friends indulge the fond hope that he may recover; indeed, these remissions often occur, but the deception is soon manifested by the recurrence of all the symptoms in an aggravated degree. In the second stage there are remissions also, particularly towards its termination, when a hope of recovery is again entertained; for although the vomiting be more frequent and more copious, all uneasiness generally subsides, but the pulse sinks, becomes irregular, and intermits; although it sinks in strength, yet it increases in frequency. Nothing is retained in the stomach; the matter vomited is of a dark color, resembling coffee grounds, and is termed the "black vomit." The breathing becomes more laborious; the tongue has perhaps lost its fur, it is shrunk, dry, and red; the eyes are sunk and glazed; the whole features are sharpened. As death approaches, the limbs become as cold as marble; there is a troublesome hiccup, which perhaps has existed throughout the whole of the second stage. Hæmorrhage sometimes takes place from different parts of the body; the abdomen is frequently as tense as a drum; and death steals on slowly, or takes place suddenly.

The symptoms in each of these stages must of course vary much according as the brain, the lungs, and contents of the abdomen, are more or less affected. In some instances the functions of the brain remain undisturbed, even to the very conclusion of the last scene; at other times, when there is extensive disease within the head, the delirium is more or less ferocious, or the patient is comatose; he exhibits a variety of nervous symptoms, such as convulsions, rigidity of the extremities, tremors, subsultus tendinum, and picking the bed clothes; or where the head is more slightly affected, the senses are only occasionally obscured; the patient may be said to be lethargic rather than

comatose ; he is easily roused, and when roused his countenance has a drunken or besotted appearance.

If the lungs be affected, the breathing will be altered from that of health ; mere dyspnœa may, however, exist, without any structural lesion of these organs. There may be cough also, attended with pain, followed by expectoration. I never saw a case of remittent fever in which the functions of the chylipoietic viscera were not very seriously involved, as indicated by nausea and vomiting, thirst, pain in some region of the abdomen, meteorism, and altered condition of the stools.

It may be mentioned, also, that the functions of the kidneys seem to be almost, if not altogether suspended, little or no urine being passed during the course of the disease ; and upon dissection the bladder is usually found much contracted.

Another variety frequently met with in very sickly seasons, is that in which a person, after passing several restless nights, is able to go through some of his duties for the first two or three mornings ; but this costs him a very great effort. His weakness increases, the bowels are out of order and constipated, or after having been for some time so, he may now complain of diarrhœa ; he feels alternate chills and heats, but the least exposure makes him complain of cold ; his stomach now begins to get irritable, he takes to bed, his senses become rather obscured, his breathing is affected in no other way than being short, and he cannot, even when he makes an effort, distend his lungs freely ; he complains most of oppression at the præcordia : sometimes a remission of most of these symptoms takes place, and his skin, which was never hot, and his pulse, which was never full, quick, and bounding, are now felt to be nearly natural ; but in a few hours the symptoms become aggravated. The patient is more inclined to be comatose than restless ; he complains now perhaps of violent pain in some region of the abdomen ; the breathing is oppressed, the extremities cold and damp, while the surface of the abdomen and thorax is hotter than natural ; hiccup comes on, the coldness steals onwards to the trunk, the pulse sinks, the countenance looks ghastly, and the patient's fate is quickly sealed.

In a work like this, it is impossible to describe all the varieties of remittent fever which occur in warm countries. Sometimes the brain is the organ chiefly affected, when the symptoms are what may be called cerebral and nervous. In another set of cases, the disease is concentrated on the lungs, when the symptoms will vary accordingly. In another set, the different organs within the abdomen may be affected, producing other varieties ; and of these there may be various modifications and complications.

*Appearances on Dissection.*—These appearances vary much, according to the duration of the disease, and the organ which has been chiefly affected ; some dying in the first stage, when we must not expect to see much, if any, appearance of inflammation. Some patients may have been largely depleted, and we shall therefore see less vascularity in their bodies than in those subjects



who have lost no blood. Some individuals may have died of remittent fever, with organic lesions produced by previous diseases. All these circumstances must be kept in view when we are employed in the investigation of morbid appearances.

Some blood is generally found in the heart and large vessels near it, and also in the lungs, if the individual have not survived long, and not been largely depleted. Pleuritic effusions are sometimes seen, and recent adhesions; the lungs themselves, in some instances, shew various stages of inflammation, and the bronchial tubes are extensively diseased. In the abdomen as in the thorax, various lesions are occasionally observed, viz: the results of peritoneal inflammation; mortification of the bowels; the liver pulpy, soft, very yellow, and easily broken down; sometimes its structure is completely destroyed, and it has been described by some authors to be in a state resembling "rotten cork." The spleen has been found altered in the same manner. The stomach and bowels, when slit open, are found to contain more or less of the dark colored matter which has been vomited during life; and the mucus membrane very vascular, of a deep red color, not in depending portions only, but over a great extent of surface, sometimes throughout the whole.

Until lately, it was not much the fashion to examine the mucous membranes minutely; and we still want information on the following points:—Whether the vessels which make such an appearance are in the mucous membrane or not? Whether the whole thickness of the intestine is discolored or not? Whether this color is owing to inflammation or infiltration? At what particular points ulcerations are most frequently met with, together with a particular description of the appearances of the ulcerated surfaces, and the adjacent mucous membrane. And it would confer a lasting favour upon me, and a benefit on science, if some enthusiastic pathologist would take the trouble to inject portions with vermilion and size, and send them to this country, together with sketches shewing the recent vascular appearances, if to enrich my rapidly increasing museum, the greater obligation will be laid upon me, and no remuneration which it is in my power to bestow, will be thought too great a sacrifice for such a boon.\*

*Causes.*—It has already been shewn that the extremes of cold and heat are not very productive of disease. Fevers are produced more by sudden changes of temperature, or by heat conjoined with moisture, than by heat itself, however intense. The state of the mind has also a great influence, as well as the habits of the individual.

It has often been remarked, that there is great mortality among troops after their first arrival in a tropical climate. This is sometimes to be attributed to a want of due care on the part of government, in choosing the season at which they ought to arrive. I believe a greater number of men will be lost during the first twelve months, if they are landed at the beginning of the rainy season, than at its termination; perhaps the loss will be double. Great care should be taken

\* It may be mentioned, that nothing affords me greater pleasure than to spend an hour in my museum, with any pathological enquirer.



in the selection of the troops ; none but well-seasoned soldiers should be sent out. Sir George Ballingall has written very strongly and sensibly upon this subject, in his excellent work on some of the diseases incident to the troops in India. No young recruit should be sent out to be made a soldier ; all his drills and exercises should be completed in this country.

When troops arrive in a distant country after a tedious voyage it is natural to expect that they will indulge themselves in many ways beyond due bounds. Cheap new rum, or a rare and an abundant supply of delicious fruits, attract their attention, and do incalculable mischief. Some men leave England in the utmost state of despondency, and it will in general be observed that they are the first victims. New comers are also apt to indulge in drinking too largely of cold fluids, and sitting in a thorough draft when the body is over-heated ; in fact it requires considerable time before a European obtains knowledge to manage himself properly. Some are fool-hardy, and take no care of themselves whatever ; and I feel convinced, that an amusement in which young strangers too frequently indulge, known in the West Indies by the name of "*Dignity Balls*," causes many a death.

Many cases have come under my observation, in which fatal attacks of fever appeared to have been produced by inattention to the bowels ; and I am convinced that it is a matter of the first importance to every one going to a warm climate, to keep his bowels open by gentle medicine. Repeated observation has induced me to believe, that a person may very often be exposed to any or all the causes of fever, even in the most unhealthy situations, without being affected, provided his bowels be in a proper state, and his mind free from apprehension.

These are a few of the many causes of disease in warm countries, entirely independent of the influence of contagion, marsh miasm, and epidemic influence.

*Pathology.*—With respect to this part of the subject, I have little to say, except to refer to the general account already given of the pathology of fever. Remittent fevers have the same pathology as other fevers, only it will be found in general that the structure of more organs is involved than in the ordinary fevers of this country. But it may be noticed, that there is no species of fever which upholds the doctrines of Broussais more completely than the Remittent.

*Treatment.*—There have been as great revolutions in the treatment of the fevers of warm climates, as in that of any other class of diseases with which I am acquainted. The supporters of the doctrine of putridity have, of course, always avoided bleeding even in the first stage, when they admit the existence of inflammation, for fear of the debility which they expect in the latter stages. They begin by clearing out the *primæ viæ*, and then have recourse to bark in very large doses, without regard to the state of the stomach, local inflammations, or any other circumstances. This is the practice recommended by Clark, Lind, and others. They prescribed opium, for the purpose of keeping the bark upon the stomach, and gave wine and brandy in considerable quantities, with the view of supporting the strength, keeping off the stage of collapse, and pre-

venting putridity. But it may be stated without fear of contradiction, that this practice cannot be too severely condemned. It should be recollected, that the stage of collapse must come on sooner or later. No person can pass from a state of fever into that of health and strength; and the longer it is postponed the worse will it be for the patient, whose situation very much resembles that of an individual in debt, who puts off the evil day from time to time by various means, and when his creditors meet at last, he is found without means to pay, whereas, had he disclosed his real situation sooner, the strength of his credit would have survived the shock without injury.

The late Dr. Chisholm, about the year 1793, introduced the plan of affecting the system with mercury as speedily as possible, employing bleeding in small quantity, and only occasionally, more with a view of enabling the system to receive the mercury, than as a powerful measure calculated to subdue the diseased action. Now my recommendation would be the reverse, to use bleeding early, as the chief means, in cases which require depletion, and mercury afterwards as an auxiliary. The celebrated Dr. Rush bled and gave calomel to diminish the increased action; and the reason this practice did not maintain its ground, is, that he trusted a little to the bleeding, and a little to the calomel, on the principal of gradually depleting the system. He rarely took more than ten ounces of blood at a time; and notwithstanding he repeated the bleedings from day to day, yet he never produced decided effects upon the disease, although he sometimes took away from one hundred to one hundred and fifty ounces of blood. The practice would have been far more successful, had he taken away twenty, thirty, or forty ounces at once.

When bleeding is thought necessary in this disease, it is trifling with the patient's life if the blood be not allowed to flow till some impression is made upon the disease, and upon the system; and it is impossible to determine beforehand the quantity which will produce one or other of these effects. This is the kind of practice which was pursued by myself and many others who were in the West Indies twenty years ago; and it appeared to be attended with great success.

Some practitioners trust almost exclusively to the action of mercury, and in India more particularly, it is deeply to be regretted that a great waste of human life has consequently taken place. Some years ago, Dr. Halliday, of the Honorable East India Company service, was, by order of the Marquis of Hastings, put under arrest, and deprived of rank and pay, for showing, by most incontrovertible evidence, that in the General Hospital of Calcutta, the enormous quantity of 26 pounds of calomel were consumed by 886 patients: And that under the digestion of this mineral, the proportion of deaths was 1 in about  $6\frac{1}{2}$  of the whole sick list,—whilst under a more rational treatment the mortality was reduced about one-half: In fact, that the mortality bore almost an exact ratio with the quantity of calomel exhibited. After a delay of several years, Dr. Halliday was restored to his rank by the express order, more than once repeated, of the India Directors. This transaction has never been

brought before the British public, but having carefully perused all the evidence, I have no hesitation in declaring, that as a piece of persecution, from beginning to end, there is no parallel case to be found in the annals of any free country. Wherever the story is known, it must cause a blot, never to be effaced, upon the memory of the then Governor-General of India and all his advisers, military as well as medical.\* The result of the practice of the rising medical officers in India has fully corroborated the statements formerly made by Dr. Halliday; and mercury is not now so much abused as it once was. And as pathological knowledge advances in India, which it is doing rapidly, mercury will be still less trusted to. It must be always kept in remembrance, however, that the liver suffers more frequently in the fevers of warm climates than in this country, and therefore mercury, under judicious management, cannot be altogether dispensed with.

In 1796, the deaths in the West Indies under Dr. Chisholm's mercurial plan, were never exceeded, amounting to nearly one half of the whole number of troops.

The bold and decisive use of the lancet in this disease has met with an able and influential advocate in Dr. Jackson, who was Inspector of Army Hospitals in St. Domingo, and subsequently in the Windward Islands. This distinguished individual bled to the extent of thirty, forty, fifty, sixty, and even eighty ounces at once in the very beginning; and he repeated the operation within three hours, if the first evacuation had not been productive of permanent benefit; after this he gave calomel in doses of from five to thirty grains, repeated every third or fourth hour.

Bleeding has been strongly objected to, on account of the condition of the blood. In some cases it appears of a very dark color, and streaked with red and blueish lines; it coagulates very imperfectly, sometimes not at all, and does not separate any serum. It is in the state commonly called "dissolved blood," and which announces, it is supposed, a putrid state of the whole body, and particularly of the fluids. This appearance does not deter me from repeating the operation, as I have been long aware, that it exists more or less in all severe cases of congestion; hence I have been frequently able to shew it to my pupils, in cases of intermittent fever, in which I have bled in the cold stage; and also in cases of congestive fever. It has also been noticed by Indian writers on cholera; a similar condition of blood may be seen in patients affected with cholera in this country, and has been observed in some severe cases of bronchitis.

\* The author regrets want of sufficient space to speak more fully of the transaction, but he cannot avoid annexing an extract from a letter addressed by the East India Directors to the Governor-General, after full investigation. "In the mean time we authorise and direct you to remove the restrictions you have placed to the further employment of Dr. Halliday, unless stronger objections shall exist to his restoration, than those which have been reported to us in the proceedings under consideration. It appears to us, that your interference in the professional discussions which were brought under your notice, has been carried further than is desirable, or consistent with the improvement of medical science." Notwithstanding this communication, Dr. Halliday was doomed to undergo still further persecutions.



Dr. Rush says he paid no attention to the dissolved state of the blood when it appeared on the first or second day of the disorder; but repeated the bleeding afterwards in every case where the pulse indicated it. He states a fact which I can verify, that it is common to see sizzly blood succeed to that which was dissolved. He states also, that he was never deterred by the presence of petechiæ from blood-letting in cases in which the pulse retained its fulness or tension.

Although the necessity of keeping the bowels freely open in this class of diseases must be admitted, yet I had not been long in a warm climate before I observed the injurious consequences produced by strong drastic purgatives, and many individuals were lost by the constant irritation kept up by this means. The appearances on dissection, too, warrant me in cautioning practitioners not to persevere too long in using strong purgatives; there can be no advantage from moderating irritation and increased action, if these be immediately re-excited. The common purgative formerly used in the West Indies, was ten grains of calomel and a scruple of jalap. Emetics have been often extolled, but I believe every experienced tropical physician will agree with me in cautioning young practitioners against their indiscriminate employment; irritability of the stomach is one of the most frequent and troublesome symptoms, and once excited, it is always difficult, in many cases impossible, to restrain it. I have seen emetics exhibited, and the vomiting has continued till death, in spite of every remedy. The same caution is necessary with regard to those remedies which are employed for moderating the action of the heart and arteries. When in the West Indies, I have often regretted not having a command of leeches, and I am persuaded, that upon a proper representation, the Government would take steps, at whatever expense, to secure a proper supply to the medical officers of the army and navy. There is no disease in which dissection reveals so many organic lesions, and the efficacy of abstracting blood in such cases by leeches is generally admitted, particularly after the severity of the disease has been broken by the lancet.

After the publication of Dr. Currie's work, Cold Affusion became generally used in remittent fevers, but much mischief followed, and it has fallen into disuse. Dr. Currie has distinctly stated, that it is not admissible in cases where there is any internal inflammation; therefore, in the majority of cases of the fever now under consideration, the practice will be found to be injurious rather than beneficial. But when the skin is dry and burning, nothing gives the patient more temporary relief, than spunging the body with water, or vinegar and water, which ought to be very frequently repeated.

The application of blisters, and other counter-irritants are highly serviceable after bleeding, &c. but should never be had recourse to in this, or any other fever, in the early stage of the disease.

I have seen stimulants appear to save life, but in candor it must be mentioned that I have also seen them very prejudicial; and I believe that nothing in the whole practice of physic requires more caution and experience than their



exhibition; but I shall speak more fully upon this subject when treating of the fevers which prevail in this country. The best stimulants are wine and brandy; in many cases where the stomach is irritable, brandy will be found to be superior to wine. In the last stage great care should be taken to support the heat in the extremities.

Partly from the notion of the resemblance between remittent and intermittent fevers, and partly from this disease being supposed to be one of putridity, bark has been employed. By some it is recommended throughout the whole course of the disease, by others only during the remissions, and in the last stage; but I believe it has done more mischief than good. I have often had to blame myself for bringing on an exacerbation, not only by the use of bark, but by nourishment and stimulants, during the first remissions; and a strong impression is left upon my mind, that it would be better for patients if less were done for them in the state of apyrexia, and also in the commencement of convalescence. No doubt, however, can be entertained, that the sulphate of quinine will be of signal service in many cases.

#### INFANTILE REMITTENT.

MANY diseases which occur in infancy and childhood have obtained this name, viz. inflammation of the brain and lungs, the irritative fever produced by teething and worms, rheumatic affections, &c.; in all of which, and even in cerebral and pulmonary inflammations, there are very remarkable remissions in young subjects. But the disease which is to be considered in this section is a febrile affection, which is in general found to depend on irritation, inflammation, or ulceration of the mucous membrane of the stomach and bowels.

*Symptoms.*—The little subject is observed to be listless, fretful, and thirsty, and to pass restless nights, with some heat of skin. In a few days the skin is hot and dry, the thirst and restlessness are increased, the breathing is hurried, and the pulse very quick. The child is more uneasy and restless at night, but towards morning the skin becomes slightly moist, when it has some disturbed sleep; the bowels are constipated, or there is diarrhœa, but the former is more frequently met with; or there is frequent desire to go to stool, but little is passed; if there be any evacuation, it is discolored and fetid. In color, the evacuations are not always dark, but sometimes white, shewing a deficiency of bile, and sometimes blueish, but always offensive, often mixed with mucus, and occasionally with a little blood. The child cries frequently, and draws its knees up to the breast,—it cries more when the belly is touched, which is hotter than the rest of the body, and tympanetic. It prefers cold water to drink, and frequently shews signs of increased abdominal pain after a copious draught; the stomach is occasionally very irritable, and every thing is vomited; the tongue, being at first moist and loaded, and occasionally very red round the edges, soon becomes dry over a triangular space at the tip. On some occasions it is difficult to keep the hands and feet sufficiently warm, while the face is flushed and the rest of the body parched.



number of interesting cases, some of which occurred in his own practice, and which will be found in the first and second volumes of the *Medico-Chirurgical Transactions of Edinburgh*.

It has been stated in the description of the disease, that symptoms of cerebral and pulmonary disease sometimes become lighted up, but on watching the progress of the affection, these are observed not to form essential parts of it; nevertheless, the appearances sometimes found in the head and thorax, deserve to be mentioned.

In the head there is generally effusion in the ventricles, and also between the arachnoid and pia mater, with great vascularity in the latter membrane.

In the thorax, the most common morbid appearance is found in the bronchial membrane, which is vascular, and the tubes are more or less filled with mucus, which is to be described more particularly when treating of bronchitis. The substance of the lungs also shews various degrees of inflammation, and occasionally there are traces of pleuritis.

*Causes.*—These are indigestible food, such as crude vegetables, sweet-meats, &c.; the habit of allowing children to eat too many articles of food at one meal; together with insufficient clothing, and unwholesome food, to which the children of the poor are so frequently exposed. Teething sometimes produces symptoms like those above described.

*Pathology.*—From this view of the phenomena of the disease, together with the appearances on dissection, and the causes, the reader will have anticipated what I have to state respecting the nature and seat of the disease, that it depends on irritation and inflammation of the mucous membrane of the stomach and bowels, particularly of the latter.

*Treatment.*—Abstinence from solid food is necessary; even biscuits, crusts of bread, and the pulp of oranges, frequently produce relapses. Leeches should be applied to the abdomen in all cases where there is much vascular action, pain, and much heat of skin, if gentle laxatives, frequently repeated, do not mitigate the symptoms. Fomentations should be applied to the abdomen; when the skin is hot and parched, sponging the body frequently with tepid water will often take off the restlessness. The practitioner should be particular in all cases, but more especially in attending children, to examine the stools, and the quantity of clothes with which they are too often covered. A remarkable case occurred to me four or five years ago, which is worthy of being mentioned. A child aged seven was seized with some degree of chilliness, followed by reaction, thirst, want of appetite, nausea; the respiration became hurried, and he complained of considerable headache. He was ill for five or six days before I saw him, and had taken repeated doses of salts and senna. On examination, I found the abdomen distended, tense, tympanitic, and somewhat painful to the touch; his thirst was considerable, the respiration quick, the face flushed, with some headache, and he complained of noise and light; the tongue loaded with a white fur, moist every where but at a small triangular space at the tip, which was red, as were also the edges; he had no vomiting, but a dislike even to the



smell of solid food; he was very uneasy and restless, passed sleepless nights, and the pulse was quick, but not particularly strong. During the course of eight days, leeches and fomentations were frequently had recourse to, and always with marked relief; but it was always of short duration. Gentle laxatives were frequently given, and injections administered, but all to no purpose; the stools were slimy and scanty, and as the child had been so long without even taking gruel, it was imagined that the bowels were empty. The abdomen was blistered. At last something excited my suspicion respecting the state of the bowels, and castor oil was given on the fourteenth day, every second or third hour, after a moderate dose of calomel and jalap. On going to stool, he complained very much of pain, he was observed to strain most violently; and after some time, he passed what appeared to be a very large fetid stool, which surprised me very much; it was so large that I was induced to examine it minutely, when three hard masses were discovered, surrounded with a great quantity of mucus. Upon close examination, they proved to be a dollar biscuit, and two pieces of solid meat; the biscuit was soft, but quite undigested and whole, with the exception of its margin, part of which had been broken off; the depressions generally made on the surface of biscuits were quite distinct, as also several of the letters of the baker's name. This biscuit was seen by a great number of gentlemen who were attending my lectures at the time, and is now in my museum. One piece of meat was large, and must have formed a good mouthful; the other was small, but both were quite unchanged by digestion, and not so putrid as might have been expected; it turned out that the boy was frequently in the habit of bolting whatever he had in his mouth, without mastication. His recovery was progressive after he got rid of these substances.

If the disease become chronic, occasional leeching, perseverance in gentle laxatives, a nourishing, but mild and bland diet, a long perseverance in counter-irritation on the surface of the abdomen, by means of the tartar-emetic ointment, and an occasional warm bath, are the best remedies. If there are evidences of effusion into the abdomen, with scanty secretion of urine, a preparation of calomel, squills, and digitalis, in doses proportioned to the age and strength of the patient, will be found serviceable, together with drinks acidulated with cream of tartar. Many of the students attending my dispensary, have seen remarkable recoveries under the plan of treatment above described, even in cases which at first appeared to be hopeless.

---

## CONTINUED FEVER.

CULLEN and others maintain, "that there is no such disease as that which the schools have called a continued fever." There can be no doubt, however, that there is such a class of diseases, if we look at nature; and that Cullen would have seen it if he could have looked through any other medium than that of his own erroneous theories. Cullen's definition—"Fevers, without inter-



mission, and without being produced by marsh miasmata, but with remissions and exacerbations, though not always considerable, continuing; two paroxysms in each day." Although all his definitions are bad, this is to be regarded as almost the very worst. Often have I seen slight continued fevers terminate in regular intermittent, and intermittent in continued fever, at least as much as any fever can be said to be continued; continued until death closed the scene, or rather, I should have said, till that stage of collapse took place which precedes death. This definition must be admitted to be too fine-spun; for if there is no continued fever, it may be also said there is no continued inflammation of the brain, or of any other organ. In all fevers, as in all diseases, there are intervals in which the patient is easier, and appears, perhaps, rather better; and there are also nocturnal exacerbations, which may be partly attributed to the sick being worn out and made worse by fatigue, heat, light, and noise during the previous day.

All the fevers which are to be described in this class, are called "idiopathic," as well by those writers who have identified in their own minds fever with inflammation, but who will not allow the existence of "*any primary local disease*," unless that disease be one of inflammation; as by others, who deny the existence of local inflammation in fever. Cullen belonged to this last class, and he states that he never had seen a case of inflammatory fever but one, therefore he endeavoured to place these fevers altogether beyond the pale of pathology. In this spirit has he framed the definition of fevers: "After languor, lassitude, and other signs of debility, pyrexia; without any primary local disease." The reader will see at once the absurdity of this symptomatical pathology, which denies to any fever whatever, except hectic, any primary local disease; for Cullen is subsequently compelled to place inflammatory fever as one of his orders, and although he gives a very common-place reason for calling inflammatory fever "*synocha*," and an explanation that this term is not to be used in its "*vulgar acceptance*;" yet we are not to be told in the present day, that the pathology of a disease can be changed by a mere name, which any one may invent. All Cullen's disciples will be found to fall into the same error, but they become caught in their own net in describing the order synochus, which, according to them, is a compound fever, of an inflammatory nature in the first stage, and typhoid in the second.

Cullen, in the 141st paragraph, makes the following statement: "In the case of synocha, (*inflammatory fever*,) therefore, there is little doubt about the propriety of blood-letting; but there are other species of fever, as the synochus, in which a violent re-action and phlogistic diathesis appear, and prevail during some part of the course of the disease; while, at the same time, these circumstances do not constitute the principal part of the disease, nor are to be expected to continue during the whole course of it; and it is well known, that in many cases the state of violent re-action is to be succeeded, sooner or later, by a state of debility, from the excess of which the danger of the disease is chiefly to arise. It is therefore necessary, that in many cases blood-letting should be

avoided; and even although, during the inflammatory state of the disease, it may be proper, it will be necessary to take care that the evacuation be not so large as to increase the state of debility which *is to follow*."

It was Dr. Baillie's opinion, that typhus was as rare as Cullen states inflammatory fever to be. The truth is, that much depends upon the class of people among whom a physician practises, and the period of the disease at which he generally sees his patients. Our army and navy surgeons have to treat fevers in subjects well fed and clothed, and whose regularity of conduct is enforced by military discipline, which physicians cannot expect among the inhabitants of St. Giles in London, and the Cowgate in Edinburgh. Therefore they seldom see pure typhus in their practice; and they will have to blame themselves if they often meet with synochus; for they are too bold and intelligent, and are too well versed in military tactics, not to attack the enemy before he gets possession of their stronghold; and they will be rarely found guilty of declining an engagement for fear of another enemy which *may* appear when they are weakened by the combat. Soldiers and sailors can very rarely conceal a fever; so that they are brought at once to the medical officers, who therefore see the disease early, and before it becomes complicated. A great deal also depends upon the treatment pursued in the first stage. If a physician were always afraid in the first stage of fevers to apply the proper remedies, when inflammatory symptoms presented themselves, lest a low or putrid tendency should subsequently occur, he will of course frequently see the compound fever "synochus" in its worst form.

I have now to treat, *first*, of fever from functional derangement; *secondly*, fever from inflammation; *thirdly*, fever from congestion; *fourthly*, a mixed form of fever, consisting of a combination of these three, but in which congestion generally predominates at last, commonly called Typhus and Synochus.

#### FEVER FROM FUNCTIONAL DERANGEMENT.

All ages and classes of society are liable to this form of fever; but more particularly children, and those who have the inclination and means to overload the stomach and bowels with too much nourishment. It is not, in general, very formidable; but cases are occasionally met with which are abundantly alarming, and difficult to treat, from the impossibility of fixing upon any one organ which can be said to be affected severely, and yet all organs are out of order, giving rise to considerable constitutional disturbance. In some cases the symptoms are exceedingly slight for a week or ten days. The patient often feels chilly, which he is apt to attribute to the weather—increasing weakness and languor, which he thinks are owing to impaired appetite; he has restless nights, with burning heat in his hands and feet, and some thirst. At last his whole surface is hot; he perhaps goes to stool once a day or even twice, and he passes something, which satisfies him that his bowels are right, when all the time they are constipated; and when a medical man is called, he will find him much in the following state:—skin parched; thirst considerable; tongue load

ed with a yellow fur; without appetite; and the pulse perhaps about 95 or upwards; the urine scanty and high coloured. He complains of restlessness, particularly at night; and general uneasiness, with oppression at the præcordia; he has slight headache; but complains most of pain in the lumbar region. The stools, when examined, will be found fetid, scanty, and adhesive; or watery and dark coloured, containing small hardened portions of feces, often mixed with a good deal of mucus. He loathes the articles of food which in a state of health he most relished, even tea and coffee, milk, beer, &c. During the night, his mind wavers; if he fall asleep, he appears restless and disturbed, and awakens with a start, the effect perhaps of a terrific dream; occasionally there is delirium. In some cases these symptoms continue even in a slighter degree for fourteen or fifteen days, and at last terminate in local congestion, or in inflammation of some organ, and in the end assume the type which is termed typhoid; in fact, these are the cases, particularly where there is delirium, which many people call "typhus mitior." This is the kind of fever which is in general cured by confinement to bed; a steady perseverance in gentle laxatives, repeated two, three, and even four times a day; quietness, and abstinence from solid food. These are the cases in which wine is often prescribed by Brunonians, with far less detriment than solid food or beef tea. These are the cases in which the cold affusion has been so serviceable when used in the early stage, because there is as yet no local inflammation.

Sometimes the fever is very sharp, and there is considerable excitement, with increased heat, general uneasiness, and delirium; the pulse above 100, full and strong; much oppression at the præcordia; the respiration hurried; the tongue loaded, perhaps dry and parched; and the bowels very much disordered.

*Treatment.*—I have a great dislike to treat this form of fever, and for the following reasons: first, the patient has been long ill before he confined himself and sought for medical advice. Secondly, the symptoms even then are apparently mild, while internal organs are seriously impeded in their functions. Thirdly, if inflammation have taken place in any internal organ, it is more difficult to treat than in pure inflammatory fever, in consequence of the exhaustion occasioned by the previous indisposition. Fourthly, nothing can be beneficial if the greatest attention be not paid to the moral management of the patient, giving him laxative medicines at regular periods, and rigidly withholding improper articles of food. Bleeding is certainly not necessary in all cases, but it is serviceable in many. I have had several cases of this description on my hands at one time during the autumnal months; and I have chosen patients resembling each other as closely as possible in habits, temperament, &c. I have drawn blood from some of these and not from others, and I never had reason to regret bleeding, but I often had to lament not doing it. It may be here mentioned, that bleeding is often employed from other motives than to cure inflammation. It is sometimes employed to moderate excitement, to diminish plethora, to alter irregular determinations of blood, and also to remove venous engorgements; but the only period for the lancet is the first days of the disease.



In such cases bleeding may be objected to, as it has been even in inflammatory fevers, but I am sure it is safe in a majority of cases; and this conclusion has been strongly impressed upon me by observing the manner in which this kind of fever, in particular, frequently terminates. First, it sometimes terminates upon the appearance of an eruption, which eruption is generally urticaria, sometimes erysipelas, which acts beneficially by counter-irritation. Secondly, it often terminates by epistaxis. Thirdly, by diarrhœa; or by profuse night-sweats. And fifthly, by abscess. Taking a common sense view, in reflecting upon these matters, I cannot help coming to the conclusion, that it is best for the practitioner to take the law into his own hand, and to deplete in cases which require it, before the strength of the body is reduced by the natural effects of diseased action. If in doubt about the propriety of general bleeding, the practitioner can have recourse to leeching; and in the class of cases now under consideration, the best place to apply the leeches is upon the abdomen or loins. Experience has led me to this practice, even in cases, in which, although the symptoms ran high, no local inflammation could be detected, and I can speak strongly of its success;—the number of leeches to be proportioned to the age and constitution of the patient, as well as the severity and duration of the disease. Emetics are very serviceable in the first stage of this fever, in order to unload the stomach of any crudities it may contain. It has been already stated, that laxatives frequently repeated are highly necessary: to an adult I give powders consisting of two grains of calomel, and six or eight of jalap or rhubarb, or a pill with the same quantity of calomel and four grains of the compound extract of colocynth. A child of six years old will require the same quantity of calomel, and four of jalap or rhubarb,—the dose to be repeated every second, third, or fourth hour, according to circumstances, till evacuations are produced, or till a fourth dose has been given, when the medicine is to be assisted by the administration of mild injections. Fomentations may also be applied to the abdomen. If the body be hot, it should be spunged with cold or tepid water, as may be most agreeable to the patient's feelings. Opiates are rarely admissable in this form of fever.

In neglected, or ill-treated cases of this class of fevers, affections of the brain, or bronchial membrane, are greatly to be dreaded.

#### FEVER FROM INFLAMMATION.

It will be recollected that, in a former part of the work, the arbitrary doctrines of fever promulgated by different individuals, viz., that fever depended upon inflammation of one particular viscus or set of viscera, were rejected; and my own opinion was distinctly stated, that inflammation of every tissue of the body, occasionally gave rise to febrile disease.

*Symptoms of Inflammatory Fever.*—In this disease the combination of symptoms denominated fever is present, and depends upon inflammation of an acute or sub-acute nature, of some organ or tissue of the body. Cullen's definition:



“Heat much increased; pulse frequent, strong, and hard; urine red; the animal functions but little disturbed.”

Although this fever sometimes takes place without any cold stage, yet it is generally ushered in with a rigor. During the early stage, the patient feels drowsy, yet cannot sleep; he is reluctant to move from one room to another, from a feeling of languor and debility; there are loss of appetite, vitiated taste, thirst, loaded but moist tongue, which soon becomes dry; general soreness is complained of, and there are nausea and vomiting; headache, and pain in the back; occasionally a combination of all these symptoms is present. Sometimes after the first rigor, heat of skin, and all the other symptoms of fever, immediately set in; on other occasions, there are alternate chills and flushes of heat for several days, till at last the heat predominates, and is permanent; the face is flushed, the skin intensely hot, with thirst, restlessness, general uneasiness; in most cases there is more or less delirium at night.

It is necessary to observe, that the symptoms vary according to the organ principally affected; but in all cases where there is great excitement, the breathing is quick and anxious, the belly costive; the tongue becomes parched, but it may be loaded, or very red, with its papillæ much raised,—or intensely red only at the tip and round the edges; the pulse is generally full, strong, and bounding, beating above 100, perhaps even 130 in the minute; there is also oppression at the præcordia. In very acute cases, I have observed the skin not only parched and burning, but red, making a considerable approach towards an exanthematous affection.

Inflammatory fevers occasionally terminate by hemorrhages from different parts of the body, particularly from the vessels of the nose and bowels; by diarrhœa,—collections of matter in various parts of the sub-cutaneous cellular membrane, and by profuse sweats. But these natural terminations are not to be depended upon.

If the fever go on without proper treatment, disease of structure ultimately takes place, in severe cases as early as the seventh or eighth day; in slighter, not before the twelfth or fifteenth; and in still slighter, not till between the twentieth and thirtieth. Whenever this event happens, all the symptoms of typhus gravior, with petechiæ, &c. &c. take place, and then the case is called synochus. It has been stated that the symptoms vary not only according to the nature, but more particularly the seat of the disease; and it is necessary in this place to give a description of these, which may be made applicable to the other kinds of fever.

There are several general symptoms which are common to a vast number and variety of diseases; as headache, heat and dryness of skin, thirst nausea, restlessness, anxiety, oppression at the præcordia, dyspnœa, scanty urine, small fetid stools, &c.; but there are some symptoms which particularly announce disease of particular parts.

If the head be affected with inflammation, the symptoms will vary according as the inflammation affects the membranes, or the substance of the brain itself.—

If the membranes, there will in general be delirium, increase of strength, such that it will require some care to keep the patient from starting out of bed; the eyes vascular, with the pupils contracted or dilated, and the countenance may present a ferocious expression; the patient will perhaps complain of pain of head, by gesture if he cannot by words; the carotids will throb, there will be great restlessness. The face is not always flushed, it is sometimes pale; the pulse will be various, the tongue dry, and perhaps in constant motion. Subsequently starting of the tendons, picking of the bed-clothes, and sometimes convulsions, take place, particularly in young subjects; the patient shews a disposition to sleep, and then becomes comatose, which state gradually increases; the pupils are dilated, and squinting often occurs. The respiration becomes more and more rapid and irregular, with an occasional interruption, immediately followed by a sigh; the pulse, which had been quick at first, and had afterwards become slower, is now again rising in frequency; it is irregular, and intermits. The coma becomes more profound, and death takes place with or without convulsions.

If the substance of the brain be inflamed, the heat of skin may not be increased, the pulse may fall under the natural standard; perhaps it will beat 60 or 50, and I have seen it even slower. The extremities may be in constant motion or not; they may be rigidly contracted, particularly the forearms, or if not so, they become contracted the moment the arm is touched even to feel the pulse. The rigidity may be confined to one arm with or without paralysis; the pupils are generally dilated, and the eye-lids half or fully open, sometimes one is shut and the other open; the tongue is not dry till towards the last stage of the disease.

In both varieties the respiration is much in the same state. The bowels are generally bound, and when stools are procured, they are passed involuntarily in bed, as is the urine; sometimes the bladder loses its power completely, and becomes greatly distended.

If the lungs be affected, the respiration will become more laborious; there may be cough, with more or less expectoration; the patient may complain of a sensation of rawness under the sternum and in the windpipe, or perhaps a stitch in the side may be felt; but here, as in all affections of the chest, we must make use of our ears in addition to the other symptoms, in order to discover whether any inflammatory affection is going on in the respiratory organs. The advantages of the grand discovery of auscultation will be stated more at large when treating of the diseases of the chest; but it may be mentioned, that even before I had been much used to the stethoscope, I was able to point out "*primary local affection*" to exist in the lungs, in cases which were supposed to present the pure idiopathic fever.

If the seat of the inflammation be within the abdomen, it will in general be announced by one or more of the following symptoms,—pain, increased on pressure, but it must be remarked, that when the mucous membrane of the intestines is the seat of the phlogosis, frequently little or no pain is experienced even

upon pressure. The patient will prefer that position in which the abdominal parietes are most relaxed; there is more or less tympanitis; and the heat is greater over that part of the body than any other. Nausea and vomiting are more or less severe; the patient drinks large quantities of cold fluid, although he knows it will produce an increase of pain, and perhaps will be immediately vomited. The condition of the tongue, has, I fear, been too much disregarded. The most extensive inflammation, and disorganizations of various kinds, may be going on in the mucous membrane of the stomach, and bowels, without producing redness of the tongue or elevation of the papillæ. Nevertheless, when the tongue is in that condition, or when it is covered with small ulcers, or when it looks red and glazed, or as if skinned, with or without patches of white fur, we are enabled to determine that the lining membrane of the alimentary canal is in a diseased condition.

*Appearances on Dissection.*—It may safely be said that there is not an organ or tissue of the body which has not been seen disorganized in fevers, and particularly in inflammatory fevers; and after what has been stated, and from circumstances which are still to be stated, it is thought unnecessary to dwell at present on this subject.

*Treatment of Inflammatory Fever.*—Sydenham, whose works are among the greatest ornaments which medical literature possesses, recommended, above a hundred and sixty years ago, the same or nearly the same practice, which stands good in the present day. He was led by his great wisdom and experience into a proper line of treatment, although he had not the advantage which we enjoy, of examining morbid appearances after death, to confirm his views. He had erroneous notions, it is true, in consequence of his imperfect acquaintance with morbid anatomy, but he was the first who pointed out the impropriety of treating all fevers alike, by shewing that different organs are affected in different cases. He pointed out also very precisely, that a fever requires different treatment in every stage as it advances. He likewise made pointed observations against the farrago of medicines which were generally prescribed, and his own plans were exceedingly simple. It was he who first introduced the plan of purging in fevers. His chief hope seems to have been on the lancet, laxatives, and opiates, the strict antiphlogistic diet, and allowing no solid food. If he could have proved his opinions by an appeal to dissections, it is probable there would not have since been so many changes in practice.

An emetic, followed by gentle laxatives; a bland liquid diet; small doses of the solution of the tartrate of antimony; and perfect quietness, will produce a cure in very slight cases. But in severe cases it is necessary to open a vein, and take away as much blood as will make an impression upon the disease, without reference to quantity. Young practitioners are often prevented from using the lancet, because there is no decided fixed pain; but they may rest assured, that in fevers, and more particularly in inflammatory fevers, some internal part in particular is suffering, although it does not exactly appear to their inexperienced eyes. Local inflammation is often concealed by the general irrita-



tion and uneasiness which prevails ; and it does not shew itself to a superficial observer till it has become very severe. We must not bleed in the manner recommended by the French, at least in inflammatory fevers. Boisseau, urging the necessity of general bleeding, says, p. 99. of his work entitled *Pyrétologie Physiologique*, Ed. 1824, "Less than 8 ounces should not be taken at each operation ; but this quantity will rarely suffice, it is necessary in general to draw 12 ounces ; one may carry it even to 16 ounces, in subjects of whom I shall speak, *but one never ought to exceed this quantity. It is better to repeat the bleeding.*" I would also beg to refer to the cases and dissections published by M. Andral, in the 1st vol. of his *Clinique*, in which the deplorable effects of similar undecided practice are too evident to require being pointed out.

The causes of the failure of bleeding in this, and other diseases, are ; *first*, most physicians order the precise quantity of twelve or sixteen ounces of blood to be taken from all adults, without reference to sex, age, peculiarities of constitution, or the actual pathology of the disease. *Secondly*, By the long period which is allowed to elapse between the bleedings, the strength is diminished, while little progress is made in eradicating the disease. *Thirdly*, No difference is in general made between bleeding a plethoric individual, and one who is in the opposite condition of system. *Fourthly*, The period of the disease influences a pathological physician, while it does not one who never looks at the inside of a dead body. *Fifthly*, The good effects of a general bleeding are very frequently lost, by not following it up, in proper time, by a second evacuation ; or by local bleedings, which are often found to be most efficacious. *Sixthly*, The good effects of bleeding are often marred by neglecting to employ counter-stimulation, and counter-irritation, as well as by loading the patient with too many bed-clothes, and by errors of diet.

The patient should be seen within a few hours after the first bleeding, and the operation should be repeated at a short interval, if necessary. If this be done, particularly if followed by laxatives, blisters, and the use of the tartar emetic, it will rarely be necessary in an inflammatory fever, however acute, to bleed a third time. But if, at the second or third visit, we find the patient so well as not to require further loss of blood, we are not to conclude that he is out of danger ; and it is necessary to impress upon the minds of students and young practitioners, that if they are to do good in such a case, the greatest attention must be paid at the very commencement of the disease : vigilance at this period will save much subsequent trouble and anxiety. When leeches are necessary, they should be applied as near the affected organ as possible. With regard to antimony, objections are very justly entertained against its use, when the stomach and bowels are either irritated or inflamed.

Some practitioners do not allow their patients to use fluids freely, particularly cold drinks ; but I believe this is a most injudicious prohibition, and that they may, in general, be allowed to gratify themselves in this respect.

The practitioner should be regular in his visits in all acute cases, as sick people watch the hours, and become impatient and dissatisfied till he makes



his appearance ; and he should be careful how he expresses himself, for one word, or even a slight alteration of countenance, may rob the patient of all hope.

When the state of collapse comes on in fever, the patient should be carefully watched, that he may have his nourishment and medicines at proper intervals, and that the heat of the body may be properly supported.

Stimulants are frequently necessary at the termination of this class of fevers ; but nothing in the practice of medicine is more difficult than to determine, whether a stimulant given in such a case is to do harm or good. When it is given, let it be in small quantity, closely watching the effect. If I were compelled to state, whether more mischief would follow the exhibition of stimulants in every case, or withholding them, I could safely say, that giving them in every case would be highly prejudicial. For although I have seen marked benefit produced by stimulants, yet I have more frequently observed mischief ; they are most beneficial when exhibited to patients with either a compressible, or a very irritable pulse, and to those who experience profuse perspirations.

#### CONGESTIVE FEVER.

THIS is a fever, in the most severe form of which the pulse and the heat of the skin are generally below the natural standard. In slighter cases, the extremities are cold, or have a tendency to be cold, while the heat of the trunk of the body is increased. The purest example of congestive disease, to which I can allude, is the epidemic cholera as it prevailed in India, and which has lately appeared in the east of Europe ; the next example is to be found in those individuals who die in the cold stage of the yellow, or any other fever. The existence of congestion is also well displayed in the first stage of intermittent fever ; and I have seen many cases of pure congestive fever succeed the cold stage of an intermittent, when full re-action could not develop itself as usual.

Congestive fever is a very common complaint in this climate, and one which is usually treated as a typhus. It is a disease which Sydenham knew well, and treated in the most judicious manner, as will be seen by consulting Swan's edition, p. 567. After stating that the invention of the term malignity, has been far more destructive to mankind than that of gunpowder, he describes as decided a case of congestive fever, as is to be found in any modern work. "*But if it be inferred (says Sydenham) that there is some malignity in the case, not only from the purple spots, but also from finding the symptoms of fever milder sometimes than should seem agreeable to its nature, whilst, notwithstanding, the patient is more debilitated than could be expected for the time, I answer that all those symptoms only proceed from Nature's being, in a manner, oppressed and overcome by the first attack of the disease, so as not to be able to raise regular symptoms adequate to the violence of the fever; all appearances being quite irregular. From the animal economy being disordered, and in a manner destroyed, the fever is thereby depressed, which in the true natural order generally rises high. I remember to have met with an instance of this*

kind, several years ago, in a young man I then attended; for though he seemed in a manner expiring, the outward parts felt so cool, that I could not persuade the attendants he had a fever which could not disengage and shew itself clearly, because the vessels were so full as to obstruct the motion of the blood. However, I said that they would soon see the fever rise high enough upon bleeding him. Accordingly, after taking away a large quantity of blood, as violent a fever appeared as I ever met with, and did not go off till bleeding had been used three or four times."

This case proves, beyond all doubt, that Sydenham must have had very good notions of the pathological condition of the body, from the expressions he uses, as well as from the practice he employed.

This disease has been described by several tropical physicians, but particularly by Dr. Jackson; and it was in warm climates that I first obtained correct notions upon the subject. But the profession is much indebted to the late Dr. Armstrong, for the very excellent manner in which he has illustrated its nature and treatment.

*Symptoms of Congestive Fever.*—We shall find, upon inquiry, that the patient has had a threatening of indisposition for perhaps ten days, a fortnight, or even three weeks, previously to confining himself,—that his appetite has been gradually impaired, with irregular action of the bowels; and that he has occasionally complained of alternate chills and flushes of heat, till at length the chilliness prevailed. This is the history which we in general receive of the progress of the severe cases. Even in mild cases, the heat of the skin is diminished; the pulse is weakened, or it is oppressed, and beats perhaps not more than 50 or 60; the prostration of strength is very considerable; the tongue is in general moist, and more or less loaded; the patient is lethargic, rather than comatose, though coma may subsequently take place; he can be roused, but the sensibility is evidently diminished; he complains of giddiness, confusion of intellect, heaviness, pain or sense of weight, either at the crown of the head or forehead. The general functions of the body will be found to be more or less impeded; but disturbance of some particular organ, in general, manifests itself, and the symptoms must of course be thereby considerably modified, as in other febrile diseases. In congestive fever, as well as in others, the brain may be the seat of disease in one person; the lungs in a second; the liver and mesenteric vessels in a third; and so on, the disease being essentially the same, but modified according to the principal seat of the congestion.

In congestive fevers there is generally a peculiar expression of countenance, it looks besotted; the manner of the patient is undecided, with an appearance of carelessness, and his words seem, as it were, to hang in his mouth; the cornea looks dim; the pupil, in the first stage, is rather dilated, and is not much affected by light. If the patient attempt to walk, he staggers like a drunken man. There is always more or less prostration of strength, and in severe cases, he is unable to stand upon his legs, or to move his hand to his head, even from the first. The respiration is short, quick and weak. He often

signifies that he has a great load in the præcordial region. As the disease advances, he becomes more and more comatose: picks the bed clothes; and is always found lying upon his back, slipping down by imperceptible degrees to the foot of the bed; the surface becomes more cold; the breathing more difficult; the face assumes a leaden hue; and occasionally, though rarely, convulsions take place; sometimes there is nausea and vomiting, and sometimes diarrhœa; most frequently, however, the patient is constipated.

It may be shortly mentioned, that the appearances on dissection are much the same as those described in intermittent fever.

With respect to the causes, they are the same as in other fevers; but I have seen several very severe cases produced by bathing in the sea, and remaining too long in the water; by taking a drink of cold water; and by a weakly person exposing himself to a damp, cold wind, when his body had been previously heated.

*Pathology of Congestive Fever.*—No one can tell which is the first link in the chain of diseased action. Congestion may take place upon hearing disastrous news, which, some say, proves that a peculiar action in the brain is the first phenomenon; but, then, exactly the same circumstance may happen from taking a cold drink, or remaining too long in the water when bathing, &c. &c.; therefore, it must be confessed there is a great deal of ambiguity about this part of the pathology. But it is unnecessary to go over the same observations which were made when treating of intermittent and other fevers, further than to state shortly, that when the head is the chief seat of congestion, there are early symptoms of lethargy, coma, and a diminution of sensibility, frequent chills, followed by other well known nervous symptoms, and occasionally by convulsions. When the heart and lungs are loaded, there is an oppressed, irregular, or intermitting pulse; weak and hurried respiration; cough; marks of impeded circulation in the face, and a difficulty in supporting the heat of the body; and in some rare cases, violent pain in the region of the heart, and along the arms, is complained of. It may be remarked, that whenever the pulse feels weaker than natural in a severe disease, it is an excellent plan to place the ear to the region of the heart, for [we shall often find it acting most powerfully when the pulse is weak in the extremities. When the congestion affects the viscera within the abdomen, there is generally a sense of fulness and distension about the stomach; the bowels are irregular, being either too loose or bound; and in either case, when stools are procured, they are found to be clay-coloured and very fetid, with very little bile, or very dark.

This opportunity may be seized for the purpose of noticing the most probable means which the animal system possesses, to prevent the balance of the circulation from being lost. *First*, there is a power possessed by all animals of preserving to a certain extent a proper degree of heat under every condition of atmospheric vicissitude,—thus the heat of the body is not a degree higher under a burning tropical sun than in this country, which so far prevents cold from producing a lost balance of the circulation.



*Secondly*, The elasticity of the coats of both arteries and veins, tends also to prevent the state of congestion, because they are capable of considerable distension, and are still contractile. These are assisted by the free anastomosis which subsists between the vessels of a part. This is well illustrated by the experiments which have been performed on the frog's foot, to determine the nature of inflammation. When a part is first irritated, the momentum of the blood is greatly increased; at last a vessel becomes obstructed, a globule of blood cannot pass through it, but is seen to make a retrograde movement, and find its way by another branch.

The pathology of this fever is happily illustrated by comparing the symptoms with the phenomena which occasionally take place in eruptive fevers, and to which I shall now make only a short allusion. In some cases when the eruption is tardy in making its appearance, alarming symptoms, and even convulsions, take place. After the eruption has made its appearance, it sometimes suddenly and prematurely disappears, when congestive symptoms occur. Let the inquirer ask himself, where has the blood receded to, which a moment before rendered the skin as red as the shell of a boiled lobster?

*Treatment of Congestive Fever.*—In considering this part of the subject, it is very useful to remember the efforts which are made by the powers inherent in the constitution to remove internal accumulations of blood, if they be in any way short of that degree which kills the patient instantly. The first of these, and the most common, is the state which in medical language is called re-action, which in its turn may create inflammation of the organ most affected with the congestion. We have next increased secretion, as a natural means of removing the congestion; as is well exemplified in the cholera morbus of India, in which, for the most part, an immense discharge takes place from the intestines and stomach.

In the treatment of all diseases, the physician has to determine whether it will be most advisable to leave the case to the natural efforts of the constitution, assisting them a little in their operations, or whether he is by a bold decisive measure to step in to relieve the system at once. In this case, he is apprehensive that the heart and other vital organs may be too much overloaded and oppressed to create full re-action, or that the system will sink under the task. He has also to fear the effects of the re-action, which may terminate in extensive local inflammation. Anxious to escape these evils, he will follow the plan pursued by Sydenham in the case quoted at page 119, and he will open a vein with a view of at once restoring the lost balance of the circulation. The quantity of blood necessary for this purpose, in any given case, cannot be previously estimated. A stimulant may be at the same time necessary, to rouse the action of the heart a little, and make the blood flow from the orifice. I have frequently proved, before a number of witnesses, that it is not inconsistent with good pathology to bleed and stimulate at the same time.

When a vein is opened, the blood will perhaps only trickle down the arm at first; on other occasions it will spring from the orifice in a large stream, and



suddenly stop before a table spoonful is evacuated. Some think this owing to an alteration in the position of the arm,—others, to the tightness or slackness of the bandage. Physicians frequently attribute this phenomenon to debility, and they take it as the most certain sign that the patient will die in their hands, were they to carry the operation farther. But it must be recollected that the blood is moving very slowly in the arteries, while the veins are gorged. When an opening is made in the vein, it suddenly empties itself, and as a supply is not quickly at hand, it is sometime before the blood begins again to flow. Let the finger be placed on the orifice, the vein will be filled, and the blood will spring again. Heat is also to be applied, and if possible, the patient should be placed in a warm bath; if that cannot be obtained, the feet and legs should be plunged into very warm water, and hot bottles placed round the body. The patient is to be rubbed with stimulating fluids, such as heated spirits of turpentine, and aqua ammoniæ; drachm doses of ether may be given, or a solution of the carbonate of ammonia, in the proportion of eight or ten grains to an ounce of water. He should be encouraged to drink warm fluids. The caution and discrimination which ought to be pursued in drawing blood under such critical circumstances, need not be insisted on; suffice it to say, that a stimulant ought to be at hand, and a finger should be on the pulse of the opposite arm, to watch the effects of our practice.

If every thing go on well after the bleeding, the bowels being in a proper state, two grains of calomel and one of opium may be given in a pill, and repeated every three or four hours.

General bleeding is only admissible in the earliest stage of congestive fever, unless in cases in which the pulse is still strong and full. Should the proper time for V. S. have passed, stimulants are sometimes found serviceable, but must be administered with caution, and relinquished for perhaps debilitating remedies, upon the first appearance of re-action. If, at any time in the subsequent progress of the case, there should appear signs of local disease, the application of leeches and blisters should be had recourse to, and the patient is to be treated during convalescence in the same manner as in any other fever.

MIXED FORM OF FEVER BETWEEN THE LAST-MENTIONED THREE, BUT IN WHICH CONGESTION PREDOMINATES. THIS IS USUALLY DENOMINATED TYPHUS AND SYNOCHUS.

In the disease which is now to be sketched, there is a combination of the last three described fevers, appearing under two forms :

1. The functional fever, subsequently united with congestion, and this forms, I apprehend, the Typhus of authors.
2. The inflammatory fever, subsequently united with congestion, and this is the Synochus of authors.

The first variety begins in the manner which has been already described in fevers from functional derangement, but subsequently, an accumulation of blood takes place in the centre of the system. When the circulation becomes so

much embarrassed, all the symptoms of congestive fever take place, the patient having been debilitated by the previous diseased action.

The second variety commences in the manner which has also been already described in inflammatory fevers, but subsequently the balance of the circulation becomes more and more lost, and congestion follows; in which state of the system, the inflammatory action is suppressed, but not extinguished. This takes place when debility and exhaustion have been already produced by the previous disease.

The brain, lungs and organs in the abdomen, are liable to be implicated, and in the worst cases which occur, they generally are all affected, either simultaneously or in succession. Hence there is a complication of symptoms, and as the disease principally affects the poor, who are ill clothed and badly fed, and as medical advice is not in general sought during the first stage of the disease, we usually find it very difficult to manage.

In the early stage of the first variety, and when alone any thing like active practice should be had recourse to, the symptoms certainly denote debility, which are as yet occasioned by oppression and obstructed action only; and often have I seen cases immediately and permanently benefited by drawing blood, in which, had the operation been postponed for twenty-four hours, it would have been quite inadmissible. It may likewise be remarked, that much of the oppression and debility also depends on the condition of the lungs, which, besides being congested and therefore unable to perform their functions properly, are subsequently still further embarrassed by an inflammatory affection of the bronchial tubes. Both these conditions tend to prevent the changes in the blood, which are well known to be elaborated in the lungs; therefore, all organs must suffer additionally, and the brain of course among others. The bronchitic affection in fever has attracted my attention for many years, and I am led to believe, that few instances of febrile affections take place, without bronchitis appearing in some stage of the disease, and very often it is the primary affection. In all the fevers which are called putrid, and which are accompanied by dark-colored spots on the surface of the body termed petechiæ, it will be found, I am almost inclined to say invariably, that bronchitis prevails to a great extent. The somewhat livid and circumscribed redness which is seen so often in the fevers called typhoid, is principally owing to the embarrassed state of the lungs; and exactly the same circumstances take place in the second variety, the synchus.

In the second variety, bleeding may be had recourse to with benefit, later in the disease than in the first, and often have I seen it decidedly beneficial when cases were going wrong under the injudicious use of stimulants and tonics. In proof of these statements, the reader is referred with confidence to Dr. Mason Good's account of typhus, in his second volume, (from page 230 to 258.) According to his views, this being "a disease of sensorial debility, leading on to putrescency," is to be treated by tonics; bleeding and purging are among the foremost objects of prohibition." Nevertheless, in the next page, the fol-

lowing contradictory statement is advanced, "hence the fever will be aggravated from local irritation, and the affected organ will be in danger of inflammation, if not of gangrene."

There is no class of diseases, in which the stethoscope is of more practical advantage than in fever, for, as has been already mentioned, the heart may be found beating violently, whilst the pulse at the wrist is so weak as scarcely to be felt, and when symptoms of general debility appear to be very great, and the extremities cold. To a patient in such a state, most medical men would naturally be led to give wine, beef tea, and animal jellies, which they would not do if they were aware that the action of the heart was strong. During the last eight years, I have seen many severe cases of fever, in which marked benefit was produced by withdrawing stimulants, and the patients have ultimately recovered after being leeches and blistered. It has also occurred to me to be called in consultation to cases of "idiopathic" fever, in which I have not only detected active disease, but have convinced the practitioners that it was going on. I shall never forget two cases of "idiopathic typhus," in which unfortunately my diagnosis was verified by dissection, in one of which the patient died of pleuritis and bronchitis conjoined; in the other, of peritonitis. Let it not, however, be supposed that I am an enemy to stimulants in all cases of fever; on the contrary, I have seen patients occasionally snatched from the grave by their judicious employment. What is wished to be impressed upon my readers, is, that in all fevers we have to dread local congestions and inflammations, more than debility and putridity. That I am in the habit of using stimulants in fever, I can appeal to the gentlemen who have been my pupils, and who have witnessed my practice; and I can also appeal to them for the truth of the following statement:—that much mischief has occasionally followed, and that therefore I feel fully as anxious about the result of a stimulant as a bleeding. When a stimulant is necessary, wine is the best; and experience has taught me that wine, or any other stimulant, is far less likely to do harm than beef tea and animal jellies.

Cases can no doubt be quoted, where stimulants, in large quantities, have been administered from the beginning of the disease, and the patients have recovered. But the best way for any one to come to right conclusions regarding this question, is, to judge from the general result of what he has himself seen. I have had many opportunities of observing that recoveries were slower, and relapses more frequent, in cases treated upon the stimulating plan, than the antiphlogistic.

Emetics cannot be too highly extolled in the last stage of some cases of fever, particularly the varieties called typhus and synochus, but only in those in which the bronchial tubes become filled with muco-purulent matter. This happens in consequence of the patient being too long asleep, or not coughing up the matter before too much has been secreted. Many of my friends have seen the happy results of administering emetics in such cases, and more parti-



cularly, my dispensary pupils will not forget many instances of this among our poor patients during the late epidemic fever in Edinburgh.

Clenliness, free ventilation, and quietness, are three great and essential circumstances to be attended to in the treatment of fever. The alvine evacuations should be removed instantly out of the room; and it is of great consequence to attend that the quantity of bed-clothes be not too great in the first and second stages of fever when the skin is parched, or too small when the patient is approaching to the state of collapse. The extremities should be examined at every visit by the physician, as sometimes the symptoms are aggravated in consequence of cold limbs, which will perhaps require no other remedy than the application of heat. The state of the bladder should be attended to, for although the urine is generally suppressed, yet occasionally it is not so. The temperature of the room can scarcely be too cold in the first stages, but I have often seen much injury produced by keeping it too low in the stage of collapse. Many patients have been strikingly benefited in less than half an hour after their bodies were made warm, and perhaps their lives ultimately saved, without the assistance of any other means. Some owe their death to being removed from a warm and ill-ventilated room into the cold ward of an hospital; so frequently has this happened, that I am obliged to run all hazards from bad air, bad nursing, and filth, rather than send my patients to the Infirmary of Edinburgh, which is ill constructed for any class of patients whatever. The sick are also badly classified, which is perhaps no fault on the part of the medical attendants, who ought to be well aware that the temperature of a ward, calculated for fever cases in the first stage, is too cold for those in the last. Every fever ward of great extent should be warmed by means of heated air, and provided with water-closets for the use of convalescents.

For a considerable time it baffled me to account for the discrepant histories of fever which have been handed down to us, and for the confidence with which opposite practices have been recommended to our notice; but further experience has convinced me that this discordance of opinion may be accounted for by one or other of the following circumstances:

1st, A difference in the character of the prevailing epidemics, and the constitutions of the persons affected; for example, a functional fever will bear stimulating remedies which would kill a person laboring under an inflammatory fever, particularly if the inflammation affected a vital organ. A stimulant given in congestive fever may operate beneficially; whereas in functional fever, or in inflammatory fever, it would be very injurious. A well fed, and previously healthy soldier, who has no cares, will in general have a high-toned fever; whereas a poor, ill-fed, and badly clothed laboring man, worn out by cares and anxieties, and living in an ill-ventilated and filthy apartment, will be affected with one of an opposite character.

2d, An arbitrary and too often empirical practice, which has hitherto been too frequently followed. One physician always bleeds in every case of fever, another stimulates; and when the results are analysed, perhaps it will be found



that the proportion of deaths is the same, and even these results will vary to support the one practice or the other, according to the habits and constitutions of the patients ; for instance, if our army and navy surgeons were to stimulate throughout the course of the fevers they have to deal with, they would scarcely save a patient ; and if practitioners entrusted with the care of the sick poor were to bleed all their cases of fever, they would be quite as unsuccessful.

3d. Writers are too often guilty of an error which all medical men are liable to commit, viz, of mixing up opinions with matters of fact in their statements.

4th, The prevailing habit of drawing sweeping conclusions from one or two facts.

5th, Unphilosophical attempts to bolster up erroneous views by special pleadings.

The proportion of deaths in fever, in my Dispensary practice, from the beginning to the termination of the last severe epidemic in Edinburgh, was as follows :

Out of the first hundred and forty cases, there was only one death. This patient was anxiously attended by a highly respectable practitioner in this place, who was then my assistant ; he died during a relapse after he had sat up. The proportion of deaths, however, subsequently increased, so that in November (1827) the calculation of deaths was one in 37. This includes several individuals who were in the last stage before we were applied to ; also a case of a girl who died during a relapse from accidental loss of blood after the application of leeches ; an old highlander, who would take no other medicine than his own mountain dew ; and an old woman above 60, who, when convalescent, took a shivering fit, and died immediately. The appearances found on dissection, in our fatal cases, were as follows : In two cases there was well marked arachnitis, viz. by extensive effusion of coagulable lymph, which was deposited between the arachnoid and dura mater. In both there was great vascular turgescence ; some effusion into the ventricles ; and in one of these there was white ramollissement in the centre of the brain. In two men, and one old woman, the vessels of the head were found very much gorged with blood, and the pia mater, throughout its whole extent, had its vessels amazingly distended with dark blood. The preparations were dried on glass, and can even now be seen in this state. In these three last mentioned cases, there was some effusion under the arachnoid, and into the ventricles ; and on slicing the brain, an unusual number of large bloody points were observed ; there was also bronchitic effusion, and in one of them a considerable portion of the lungs was in a state of softening, and intensely red. In the old woman, there was little disease in the mucous membrane of the stomach and bowels ; but in one of the men, there was extensive vascularity of this membrane, but no ulceration ; the mucous membrane of the stomach was much corrugated, and the whole of the splenic extremity was studded with red points, which were seen through a great quantity of thick viscid mucus, which being washed off, and the stomach stretched, these red points were discovered to be vessels,

which existed in immense numbers ; the vascularity was greater, however, in the mucous membrane of the bowels, particularly throughout the whole of the ileum, and a great part of the colon. In the other man, when the abdomen was opened, the small intestines had a black appearance, as if in a state of mortification ; they were found filled with a bloody-looking exudation, which, from its weight, had borne them down into the cavity of the pelvis. It was thought at first that this matter was the sole cause of the discoloration ; but upon cutting open the intestine, it was found that they owed this color principally to great vascularity ; there were no ulcerations. There are dried preparations, and drawings of the appearances in this case, in my museum. In other cases, there were ulcerations in the ileum and colon, of which also the preparations and drawings are in the museum ; and I confess, I am inclined to believe, that if these appearances were properly looked for, they would be more frequently seen. In one case, the kidney was enlarged, as well as the ureter, the pelvis, on being cut open, was found to contain about six ounces of pus, and the inner membrane was very vascular. In the body of the old woman, who, it has been above stated, died suddenly during convalescence, the chief diseased appearance was, that both lungs were found as black as they usually are when affected with melanosis. I was not at the dissection, being engaged at the time in delivering a lecture ; but Dr. Crellin, who conducted the examination, sent for me, and it was proved to the satisfaction of all present, that this appearance was not melanotic, but produced by venous engorgement. I had never before seen the whole of both lungs so completely congested ; they sank in water, but after being washed, they regained not only their natural appearance, but their proper degree of buoyancy. The characters of the ulcerations shall be stated in the second part of the work, when treating of inflammation of the mucous membrane of the stomach and bowels.

### HECTIC FEVER.

HECTIC fever is generally supposed to be symptomatic ; even Cullen embraced this opinion. It may be defined to be febrile symptoms occurring in the course of some internal chronic disease, when the patient is much debilitated. Heberden states that irritation in any diseased organ will give rise to it. An opinion has been pretty general, that hectic fever is produced by no other cause than the absorption of pus ; and when pus was not found upon dissection, it was hastily concluded that it had existed, but was all absorbed ; or that hectic fever is sometimes idiopathic. My own belief is, that this combination of symptoms has no necessary connexion whatever with pus ; and according to my experience, it most frequently (although certainly not always) depends on inflammation of the mucous membranes, and more particularly that of the stomach and bowels.

*Symptoms.*—Hectic fever is attended with great and increasing debility ; a weak quick pulse ; each paroxysm commences with chilliness, succeeded by re

action, and which is soon followed by copious perspiration. Indeed, sweating is at all times easily excited by any exertion. The surface is pale, except the cheeks, which present what is very aptly styled the "hectic blush;" and there is frequently great wasting of the muscles. The appetite is impaired, the stomach occasionally very irritable, and in nine fatal cases out of ten, diarrhœa comes on during the course of the disease. The discharge from the bowels is always very fetid. The breathing is anxious. The patient is generally restless, and frequently complains of pains that are ascribed to rheumatism.

It is said that this disease is liable to be confounded with intermittent fever; but the history of the case, and the appearance of the patient, will readily distinguish them.

*Treatment.*—As hectic fever depends upon a morbid condition of some structure of the body, our attention must be directed to the seat of the disease. Surgeons very often cure patients of hectic fever, by cutting off a diseased limb which had produced the constitutional symptoms. There is no case in which the difference is so strikingly shewn between routine practice, and that which is directed by sound pathological views. The routine practitioner will be invariably found to treat some of the symptoms thus:—Has the patient no appetite? Give him a tonic.—Is he purged? Prescribe an astringent.—Is he griped? Give him an opiate.—Is the urine scanty? He must have a diuretic.—Has he profuse perspirations? Let acid drops be exhibited!

A pathologist, it must be admitted, is often obliged, in the present state of our knowledge, to act empirically; but his remedies will always be found to be few in number. If the patient have diarrhœa, he will endeavour to ascertain upon what morbid state that symptom depends; if there be pain in the abdomen previous to an evacuation, if the pain be increased by taking a cold drink, if the tongue be red and glazed, if there be aphthous ulcers in the mouth and throat, if the stools are mixed with mucus, or are watery and fetid, he knows he has to treat inflammation, and probably ulceration of the intestines. This leads him to apply a few leeches to the abdomen, if the patient's strength be not greatly reduced, followed by counter-irritation; and then, if there be any remedy that he knows will relieve the patient, that remedy he will prescribe. It is truly lamentable to see the symptomatical physician, one day treating the diarrhœa with astringents, and the next waging war against the perspirations.—This subject will be more fully illustrated hereafter. Opiates are frequently of considerable use in soothing the patient's sufferings.

---

## GENERAL PATHOLOGY OF ERUPTIVE FEVERS.

THE diseases which fall to be described under this head, are to be considered as fevers, attended during part of their course by eruptions. Whatever difference there may be in the appearance and form of the eruption, they have a certain general character common to all, viz., that febrile symptoms precede the eruption.



According to the humoural pathology, the fever is produced by a concoction of the humours, by which a peccant matter is thrown to the surface, forming the eruption. Other pathologists look upon these diseases as peculiar and essential affections of the epidermis, sometimes *followed* by inflammation of the chest and its accompanying fever; and they account for the sore throat which occasionally occurs, by its continuity between the skin and the diseased internal organs.

My own opinion is, that the eruption ought to be regarded as a mere symptom of this class of disease. Yet it cannot be denied that there is something very peculiar in it,—peculiar in as much as the eruptions present external characters differing from each other, as well as from other eruptions, and that the diseases occur only once in a lifetime. After a long and patient investigation, comparing the symptoms with the appearances found on dissection, I have come to the opinion, that the mucous membranes are the seat of the disease, the nature of which is inflammation, more or less acute and extensive; and that the part generally most implicated, is the mucous membrane of the lungs, particularly in measles and small-pox; while that of the bowels is the part chiefly, if not principally, affected in urticaria, roseola, and miliary fever. The eruption is merely to be regarded as a symptom, and by no means a universal symptom. It is well known that many cases of eruptive fevers are very mild, and require little treatment, while others are extremely severe and fatal; and that a great deal depends upon the eruption, whether it comes out at the usual period, and whether it remains out, or prematurely and suddenly recedes. The eruption, in point of fact, ought to be regarded as a natural blister, acting as a counter-irritant. It is produced by powers inherent in the constitution, that enable it to remove so much of the diseased action from an internal organ, the functions of which are more immediately necessary to life. In slight cases, I conceive the eruption is in proportion to, if it do not exceed, the amount of the internal disease. This may be stated without reference to the quantity of the eruption, except perhaps in small-pox. There can be no doubt that the eruptions are produced by inflammation of the cutis, which consequently must take off so much of the determination of blood, and so much of the diseased action from internal organs.

These circumstances it appears to me, are clearly proved,

1. By attending to the constitutional commotion and oppression of the whole system, and the morbid changes in the functions of various organs, for many days before the appearance of the eruption.
2. By the relief afforded, in general, after the free developement of the eruption.
3. By the increased suffering and danger which exist when the eruption is deficient, or when its repulsion suddenly and prematurely takes place.
4. By the relief which follows proper treatment; and,
5. By the appearances observed on dissection.



With respect to the first of these points, it may be stated, that the eruption does not appear in general till the third, fourth, or fifth day of the complaint, and during that time, the patient labors under the combination of symptoms denominated fever, and suffers from the impeded functions of all organs; all the symptoms denote internal disease. That the respiratory organs suffer very considerably, may be discovered by the state of the respiration, the cough, the anxiety and color of the countenance; but more particularly by auscultation, which will announce bronchitis in its first stage. In this stage, which is called the eruptive, there are very frequently affections of the brain, announced by the patient being in delirium, lethargy, or even coma; and it is by no means uncommon to see convulsions, or other serious nervous symptoms, come on, at the period when the eruption ought to have been fully developed, but has not yet appeared, or has only partially come out.

As to the second point which has been offered in proof, it is to be observed, that the symptomatical physician will not be inclined to receive it as evidence in favor of the views which I wish to establish. He will say there is no relief; and in so far he will say truly. The eruption being occasioned by extensive inflammation of the skin, produces great irritation, and very often an increase of the febrile symptoms; that is to say, the person will complain more of thirst, restlessness, and uneasiness, than previously. But still a pathological eye will discover relief,—relief produced by the translation of a part, and perhaps a great part, of the diseased action from internal organs to the surface. The symptomatical physician will point out to us that the respiration is still hurried and short, but we may be able, after an examination of the lungs, to assure him that there is less congestion of the lungs, and less inflammatory action in their mucous membrane, than before; and that the state of the respiration which he has noticed, is now produced principally by the hurried circulation through the lungs; so that pathologically speaking, the patient is relieved. A common blister when, it is sufficiently large, very frequently increases the patient's sufferings, while it has mitigated the disease.

The third point of proof is the acknowledged danger which exists when the eruption is deficient, or when its repulsion has taken place. Dr. Gregory, in his lectures, when treating of scarlatina, used to make the following statement: "We find a connexion similar to that between the efflorescence and other symptoms in this disease, existing between the eruption and general affection in measles, for there it is not critical, but is accompanied with an alleviation of the symptoms, which is greater or less according to the degree of the eruption; and all the symptoms are very much aggravated by the repulsion of it." Indeed, if the reader will refer to any author who has written upon this subject, he will find, that in the severe forms of the disease, which are commonly described under the terms *scarlatina maligna*, *scarlatina anginosa*, and in *rubeola putrida* also, the eruption is either wanting, or it appears at irregular periods, but is seldom permanent; and it is in these severe cases that we meet with what are called typhoid symptoms, diarrhœa, and hæmorrhage from the nose, mouth,

or bowels. The first question which it is natural for an inquirer to ask, is, by what cause is the danger produced? It appears to me, that the reply is very easily made. There has been lately an extensive inflammatory action in the skin, which required a determination of blood to support it. During this time the symptoms were not very severe; but the moment that the blood forsook the surface, it was marked by increased internal distress; the respiration became more laborious, and the patient more or less comatose; perhaps convulsions appeared. Is it not quite natural, therefore, to conclude, that these effects are produced by the sudden determination of blood taking place towards internal parts, ending in inflammation of one or more organs, if the eruption be not brought back? But it will frequently be that kind of inflammation which has been described as "suppressed," and which cannot fully develop itself. The external symptoms will lead a symptomatical physician to stimulate and give tonics, when the pathologist would try the effect of the warm bath, stimulating frictions, and bleeding by leeches, if he could not open a vein; and he would also apply blisters.

The fourth point in the evidence is the relief afforded by proper treatment. When the eruption is repelled from the surface, we use all the means within our power to recall it; the warm bath and stimulating frictions are first employed. The warm bath, which is the principal means to be depended on, may not be at hand, or we may have tried these remedies and failed; but we ought not to delay long under any circumstances, to open a vein, if the eruption be not speedily re-produced, particularly if the patient be above two years of age, and a vein can be found; if not we must depend upon leeches, warm bath, and blisters. By opening a vein, however, we prevent a great deal of mischief and risk to the patient. If we cannot recall the blood to the surface, we reduce the quantity of it in the whole system, and thereby remove the congestion from internal organs, alter the determination of blood, and then assist the system in creating re-action, if necessary, by the addition of a stimulant. But all this, to produce benefit, must be done instantly; every moment lost, diminishes the chance of success. I am entitled to speak strongly, from the great success which has attended the treatment here recommended, not only in my own practice, but also in that of many of my pupils. Although many of these cases may be quoted in detail, yet the perusal of the following case, translated from the *Clinique Médicale*, by M. Andral, vol. iii. p. 72, will perhaps make a sufficient impression upon the minds of my readers. This case is entitled, "*Acute bronchitis; Measles; Premature disappearance of the eruption; Fatal dyspnœa.*"

"A baker, æt. 20, of a strong constitution, was affected within the last five or six weeks with slight diarrhœa; presented on the tenth April all the precursory symptoms of measles, redness of eyes, flow of tears, coryza, hoarseness, cough; and continued in this state for the three following days. On the 14th, the eruption appeared, and the patient took to his bed. On the 15th his whole body was covered, and in the evening he was admitted into the Charité; when

he had a confluent, well-marked eruption ; hardness and quickness of the pulse ; redness of the tongue and lips ; and a strong cough ; there was otherwise no alarming symptom. Towards the middle of the night, the patient experienced, all of a sudden, an oppression, which rapidly increased, and on the following morning we found him in a state of partial asphyxia ; the eyes prominent ; the face violet colour ; respiration short and very frequent ; cough nearly constant ; little mucous expectoration. Percussion elicited the natural sound through the whole of the chest, but the mucous rattle was audible, in different points, by means of the stethoscope. There remained only a few pale spots of the cutaneous eruption, which were fast dying away. The pulse preserved its frequency and hardness, and the tongue its redness. This train of symptoms seemed to indicate the existence of pneumonia ; nevertheless the pathognomic signs of this complaint were completely wanting.

“ Could a simple bronchitis occasion, by its extreme acuteness or sudden exasperation, so much dyspnœa ? and might not this inflammation, joined to that of the alimentary canal, account for the complaint with which the patient had been so violently attacked ? Be this as it may, the indications of treatment were clear ; to lessen the internal inflammation\*, and to effect a return of that on the skin. With this object, twenty leeches were applied to each side of the chest, and ten to the epigastrium. After the blood had ceased flowing, a blister was applied to each leg, and the skin rubbed all over with lineament of ammonia. Marked relief followed the use of these means ; in the evening the respiration was much less impeded, the cough less frequent, and the tongue had lost its redness. The eruption, however, had not returned.

17th, The patient presented the symptoms of a severe bronchitis, accompanied with fever ; the respiration was only slightly accelerated.

18th, The fever was reduced to almost nothing, and the opaque expectoration announced the speedy termination of the bronchitis. In the evening, the respiration suddenly became very difficult, and twelve ounces of blood† were abstracted from the arm. The next morning the dyspnœa was still very considerable, and the pulse had become more quick. Two blisters to the thighs. During the whole of the day, the sense of suffocation continued to increase.

“ 20th, Face extremely livid, violet colour of the lips, orthopnœa ; from the appearance of the patient, one would have thought that he was dying of aneurism of the heart.

“ *Inspectio cadaveris.*—The mucous membrane of the larynx, trachea, and bronchial tubes, and of the smaller ramifications, were of a scarlet red. In a few points at the beginning of the division of the bronchia, there were some white concretions, resembling the false membrane found in croup.

“ The lungs were sound and crepitated throughout their whole extent, posteriorly they were gorged with blood. Heart natural : clots of blood of a deep

\* Had the distinguished author used the term “ congestion ” instead of inflammation, and had he employed V. S. without delay, instead of applying leeches, he would have altered the determination of blood, and probably relieved the deceased organs.

† It is to be regretted that this was not done two days earlier.



black in the right cavities ; stomach white, as well as the small intestines, which contained a great number of ascarides and lumbrici in the lower portion ; the cæcum contained several worms, (triocephales) ; its mucous membrane presented a red spot near the valve, from which arose three or four small conical vegetations, three or four lines long. The rest of the large intestine white, and filled with liquid feces. Liver gorged with blood. Spleen large and firm. A great quantity of serum infiltrated into the sub-arachnoid cellular tissue ; the cerebral substance was not at all injected : the lateral ventricles, especially the right, were distended by much limpid serum."

The fifth point of evidence rests upon the appearances found on dissection ; and it may be shortly mentioned here, that these consist of all kinds of lesions of the brain and membranes usually produced by acute and sub-acute inflammation. The same observation may be made respecting the organs in the thorax. Within the abdomen, the chief diseased appearance to be observed is in the mucus membrane, particularly of the large intestine, which is inflamed, sometimes ulcerated. But in no case does the pulmonary system escape. The appearance of the brain and abdomen are not so universal, and may occasionally depend upon the impeded functions of the lungs, as will be shewn hereafter.

If these observations be not fallacious, bleeding to a sufficient extent ought not only to relieve the constitutional symptoms during the eruptive fever, but after the eruption has appeared, ought to destroy it. Observations and experiments frequently performed and repeated by myself, and by my pupils, enable me to state, that these are facts, which I shall not be afraid to repeat before the highest authorities in the profession, and stake my professional reputation upon the general result of the plan ; having already seen recoveries take place, under this treatment, in cases in which such a happy termination was scarcely to be anticipated. It also follows, if these things be true, that even in ordinary cases there are two periods more critical and dangerous to the patient than any other ; these are, the period at which the eruption ought to make its appearance ; and that at which it should naturally disappear. In the first case, the internal disease has gradually become extensive and severe, and wants relief by means of the eruption. In the second, the disease which had existed at first, having been relieved by the external irritation, is now in danger of being re-produced by its cessation ; and this of all others is the period at which, in the slightest form of the disease, the patient stands most in need of care and vigilant attention to the condition of internal organs.

This pathological description, if it should appear deficient, is so only, I am convinced, from the want of sufficient illustration, which would require a separate treatise on the subject. It is introduced in this place to prevent repetition, when treating of each of the diseases which fall now to be described.

## SCARLET FEVER.

THIS term is employed to denote a disease attended by a fever, sore throat, and a red rash on the surface, which rash appears sometime between the second and fifth or sixth days of the disease, first upon the face and neck, and progressively spreads over the body, terminating between the seventh and tenth days. The rash has very much the appearance of the shell of a boiled lobster, and frequently there are minute vesicles. The inflammation of the throat sometimes runs into ulceration and sloughing.

The literary history of this, or of any other disease, is of little importance in comparison to an intimate acquaintance with its pathology, and proper means of treatment. Therefore I shall proceed to describe the phenomena, without caring from whence the disease came, or in what century it first appeared, further than to notice that scarlatina and measles were formerly confounded, from their mutual pathological resemblance. Sydenham appears to have been the first who gave this disease the name of scarlet fever, as well as a distinct description of the affection, pointing out the circumstances, with sufficient precision, in which it differs from measles.

The term scarlatina, notwithstanding the philippic of Dr. Mason Good, is quite as good as his term "rosalia;" it affords us an example of what is by no means rare, a disease receiving its name from a single symptom.

Scarlatina has been divided into three species, viz.

Scarlatina simplex.

———— anginosa.

———— maligna, which last includes the disease termed cynanche maligna.

My chief objection to these terms is, that they do not spring from pathological considerations; and it may be said in the language of Dr. Hamilton, sen., (not the professor,) that "it is altogether foreign to my purpose to engage in this controversy; and more so, as the distinction begins to lose ground as our knowledge of the disease becomes more comprehensive and accurate. The time may not be far distant, when scarlatina will be received as the generic disease, the full history of which will include the more aggravated symptoms as they appear in scarlatina anginosa, and in cynanche maligna; in the same manner as the history of variola comprehends the varieties of the distinct and confluent small-pox."

Scarlet fever is a fatal disease, and more particularly so, it is said, in this city. The plague is scarcely more dreaded at Constantinople than scarlet fever is in Edinburgh; not because the disease is peculiarly severe, but that the notions taught in a dark age still prevail, and that certain individuals have not kept up their knowledge with the improvements since made in pathology.

*Symptoms.*—In eruptive, as well as other fevers, there are two great varieties, which may be named the congestive and the inflammatory; and sub-divisions might be made of different combinations of these two.

In the congestive form of scarlatina, the patient complains of oppression, and so much debility, that he cannot support himself. Rigors more or less severe accompany, or precede, these symptoms. The face is pale, the features sharp, the eyes hollow, and deprived of their accustomed animation; the surface cool, particularly the extremities, while perhaps considerable heat is felt on the trunk of the body; the breathing is performed with more or less difficulty; the pulse varies, being sometimes soft, and perhaps weak, although it is occasionally strong; the tongue has a whitish and shrunk appearance. If the patient utter complaint, it will be of universal prostration and of headache, or weight on the top of the head, together with oppression at the præcordia, and difficulty in swallowing. On examining the fauces, the parts may appear somewhat swollen, and of a dark colour; and should there be any ulceration, it will perhaps be ash-coloured, and look indolent. It may be stated, and with some plausibility, by that class of practitioners who are led only by symptoms, that those just described do not denote the existence of scarlatina; to which it may be replied, that one individual of a family will display such symptoms, while others are labouring under the disease in the ordinary form. Similar appearances have also come on in the course of scarlatina, upon the sudden disappearance of the rash; and further, the cessation of the congestive symptoms has been witnessed upon the re-production of the rash; which phenomena have occurred so often, that I am compelled to receive them as part of the medical evidence. I have had one opportunity only of examining the body after death, in a subject who fell a victim to this form of the complaint. The throat was found to be very slightly ulcerated. There was considerable distension of the veins in the abdomen, the lungs were much congested, and the vessels of the head were remarkably full of dark-coloured blood.

The pure congestive disease is rare, but it is very common to see the mixed disease, that is, a combination of the inflammatory with the congestive symptoms.

The inflammatory form of scarlet fever generally makes its attack in the following manner:—rigors, or only slight chilliness, followed by more or less pyrexia, restlessness, want of appetite, thirst, want of sleep, headache, some degree of nausea, oppression in the præcordia; tongue at first slightly loaded red, with raised papillæ; or it may be much loaded with a yellow fur, and intensely red at the tip and round the edges. Soreness of the throat is complained of, which is sometimes the first cognizable symptom; it is either slightly swollen and much inflamed, or of a dusky hue, without much swelling; ash-colored ulcerations may often be discovered, but we must be upon our guard not to mistake exudations of coagulable lymph for ulcerations. In the generality of cases, there are evidences of sub-acute inflammation in the larynx and bronchi, which is announced by difficulty of breathing, cough, and hoarseness, and more particularly by auscultation; but the inflammation in the bronchial tubes is not so decidedly marked in all cases of scarlatina, as in measles and small-pox. Sometimes there is delirium, but perhaps during the course of the



night only, and sometimes some degree of coma. These symptoms may continue for 2, 3, 4, 5, or 6 days, before the rash makes its appearance. Sometimes, indeed, the eruption is the first symptom which announces the complaint, but this happens in the mildest cases only. In general the eruption appears on the 4th or 5th day.

The eruption is of a scarlet color, first to be observed on the face and neck, and in the course of twenty-four hours it becomes pretty generally diffused, patches appearing here and there more intensely red than the surrounding parts; on pressing with the finger a white mark is left, but the redness returns in a moment afterwards.

After the eruption has existed from 3 to 5 days, it begins to decline, the cuticle subsequently separates and peels off. This is a very dangerous stage of the disease, and would be still more so, were it not that the eruption declines gradually, and that the circulation on the surface is still actively employed in the formation of new cuticle for the whole surface.

Dr. Gregory, in his lectures, used to state, that "a copious effervescence is a favorable symptom; when it is deficient the symptoms are more severe, and when it is repelled, it never fails to aggravate both the general fever, and the topical affection of the throat." "It is not an easy matter," continued he, "to explain the connexion which subsists between the efflorescence and the other symptoms; it is not critical, but all the symptoms are much relieved by its coming out copiously."

Occasionally anasarca, and more rarely ascites, follow in the first or second week, and are attended with constipation, scanty urine, languor, nausea, general uneasiness, and other symptoms which have been denominated secondary fever.

*Appearances on Dissection.*—In the dissections which have fallen within my observation, the inflammation and ulceration in the throat have not appeared so extensive and important as had been imagined before death. The most constant diseased appearances have existed in the air passages, presenting inflammation in its different stages; viz. vascularity of the mucous membrane thickening, and occasionally ulceration; in two cases I have seen the epiglottis nearly destroyed by ulceration; and also effusion of thick, tenacious matter, filling up the air passages to the bifurcation, and often lining the trachea. Sometimes the substance of the lungs is seen inflamed, and occasionally the pleura, but traces of inflammation in these two tissues are not so frequently met with, and are to be regarded more as examples of acute action, extending from one tissue to another by contiguity, than as forming essential parts of the disease. The lungs are sometimes so much gorged with blood, as to have lost in a great degree their natural appearance and buoyancy. In the brain there is sometimes arborescent vascularity, with turbid effusion between the arachnoid and pia mater, and the ventricles are occasionally filled with serosity. On opening the abdomen, the peritoneal coat of the stomach and bowels generally looks healthy, except in the congestive cases, when the minutest blood-vessels

will be seen distended with dark-colored blood. In different parts of the mucous membrane, we frequently see considerable vascularity, sometimes ulceration. The liver is often gorged, or soft in texture.

"From a cautious survey of the symptoms during life," says Dr. Armstrong, in his work on *Scarlatina*, &c. page 16, "and from the examination of several bodies after death, I am warranted in affirming, that the brain, the liver, the stomach, the intestines, and the lungs, are the parts most often inflamed, and that the inflammation in these parts is generally the cause of death, together with the affection of the throat."

*Treatment.*—In scarlatina, as in other diseases, differences in pathological opinions have of course given rise to dissimilar methods of treatment. Some, considering it a disease of debility, recommend bark, and wine, or brandy, with nourishment, and condemn antiphlogistic means as highly dangerous; in this class of symptomatical writers stand Underwood and Dr. James Hamilton, Jun. It will not surprise my readers, that the first named individual, who did not live long enough to profit by modern pathology, should have taught the doctrines that prevailed in his own time; but considering the account which every author gives of the symptoms and course of this disease, and the appearances on dissection, it is lamentable to reflect that there is one author of the present day, who speaks doubtfully even of local bleeding in scarlatina, and who recommends cordials and nourishment, and even wine itself, in large quantity. But all this does Dr. James Hamilton, Jun.\* he goes even the length of quoting a great medical authority, *the head master of a boy's school in Yorkshire*, in whose practice, among the said boys, "it was found that children under 15 years of age, affected with this disease, required within the twenty-four hours, sometimes not only a bottle of port wine, and another of raisin, but also a proportion of brandy."† Poor boys!

Underwood, in describing the treatment necessary in this disease, makes the following extraordinary statement: "Should the affection of the throat, therefore, be evidently inflammatory, or should a case occur where the fever may seem to be of that kind (which may be better ascertained by the hardness of the pulse than any other symptom) it will very rarely bear bleeding, even in the beginning of the disease; as symptoms of debility generally attend in some period of the scarlet fever, and will allow only of that middle course of treatment hinted at above. In a general way a cordial plan is required throughout the disease."‡ And yet, on turning the next page, it will be found he recommends bleeding in the secondary fever; and he also tells us, that a critical bleeding from the nose has saved life, when the patient's state "has appeared very hazardous, and the prostration of strength been considerable."

In the slighter forms of scarlatina, very little treatment is necessary, further than confinement, attention to the bowels to keep them free, and the antiphlo-

\*Vide his work on the Diseases of Children, p. 380.

† Management of Children; p. 881, Ed. 1824.

‡ A Treatise on the Diseases of Children, p. 289.

gistic regimen. In such cases, however, the medical attendant should be careful to watch diseased action, at the period when the eruption naturally declines, for reasons already mentioned. I used formerly to see fatal cases of scarlatina, when I practised according to the opinion of the schools, carefully abstaining from blood-letting, and using all the means recommended to support the strength; but it occasionally occurred to me to see patients snatched from the grave by considerable bleedings from the nose, and at times when it was thought the loss of an ounce of blood would prove destructive. These circumstances, together with the appearances found on dissection, led me to bleed in many subsequent cases, and I have never had occasion to regret it. Blood has been drawn at all periods of the disease, in cases where the state of the lungs and brain required it; and should the operation be performed during the period of the eruption, it will disappear, if a sufficient quantity of blood be taken. When the inflammation of the throat runs very high, I know no remedy productive of such certain and immediate good effects as general bleeding, but should the patient's strength be already reduced, leeches are to be preferred.

Dr. T. P. Lucas of the Royal Artillery, and Dr. Wilson, cannot have forgotten the case of Ann M<sup>r</sup>Farlane, aged 18, which they treated, when they were my pupils in the year 1824; from whom they took above  $\frac{3}{4}$ xx of blood, with instant good effect, on the fourth day of the disease, when she had a large sloughing ulcer occupying the whole of the right tonsil. She afterwards required no other remedies but laxatives, and in a fortnight returned to her usual occupation.

A great many other gentlemen, who have been pupils at my dispensary, can be appealed to, and I may refer in an especial manner to the testimony of my talented colleague, Dr. Robertson, who was opposed to the practice of general bleeding in scarlatina, till he saw the success of it. When general bleeding is either inadmissible, or not thought necessary, or when the child is under two or three years of age, local bleeding by leeches will be found highly serviceable. When the throat is extensively inflamed, although the accompanying symptoms may be mild, I always think it right to reduce the inflammation by the application of leeches, followed or not by a blister, according to circumstances. Laxative medicines, frequently repeated, are very necessary. Spunging the body either with tepid or cold water, produces good effects, by allaying restlessness. Cold affusion may do no harm in the slighter forms of scarlet fever, but in the severe cases which invariably display marks of internal disease, and in which congestion has taken place, its use cannot be defended.

The tartrate of antimony has been long employed in this country in the treatment of fevers and inflammations, and it has been found very serviceable in this disease, by controlling the action of the heart, and relieving uneasiness. It may be used in the diseases of children, by dissolving one or two grains in two ounces of water, a tea spoonful for a dose as often as may be thought necessary.



Gargles may certainly be employed, and those of a stimulating nature are much lauded ; but it appears to me that the best gargle is a little warm water ; and I particularly caution young practitioners against attempting to syringe the throat of a young child. Inhalation of the vapour of warm water will be found to ease the throat more than any gargle. Opiates are often serviceable in the last stage, and during convalescence, to allay irritability, and procure sleep.

Since the alteration which I have adopted in practice, I rarely see secondary fever or dropsy ; but too great care cannot be taken during recovery, and the patient should be cautioned against the risk that he will run from exposure, errors of diet, and neglecting the state of the bowels. Should dropsy take place, it will in general be found to be of the acute kind, and will sometimes require the lancet, although brisk purgatives, with diuretics, will in general suffice.

In conclusion, it may be mentioned, that various affections occasionally follow scarlatina, as inflammation, and swelling of the glands, and perhaps more particularly of the parotid, which must be treated upon ordinary principles. Inflammation often attacks the internal ear, leaving a fetid discharge, followed on some occasions by incurable deafness, which must also be treated by appropriate means. These and other appearances following scarlatina, are commonly known by the term “dregs” of the disease.

---

## MEASLES.

MEASLES may also be defined to be a disease attended by fever and an eruption, which appears at various periods, but generally at the termination of the fourth, or beginning of the fifth day, and continues for three, four, or five days ; after which, some discoloration is left on the surface of the body, and occasionally the cuticle separates, but not so invariably as in scarlatina.

Measles has been divided into four varieties :

1st, *rubeola vulgaris*.

2d, ——— *sine catarrho*.

3d, ——— *nigra*.

4th, ——— *putrida*.

Pursuing the same pathological plan which has been adopted when treating of scarlatina, I shall also mention two great varieties of measles, the congestive and the inflammatory.

In the first species, which has been so well illustrated by Dr. Armstrong, reaction does not take place ; or if it do, it is slight, the eruption is trivial ; the pulse is feeble and oppressed, perhaps quick ; and the surface is free from that redness and heat which give such a striking external character to the pure inflammatory disease. This is, no doubt, one form of the complaint called “*putrid*,” and which has been described by Morton, Huxham, and Watson. The same pathology that was maintained in scarlatina, and also in the general state-

ment concerning eruptive fevers, equally applies in this case ; and renders it unnecessary to repeat the observations.

Capuron, in his treatise on the diseases of children, at page 293, makes the following statement :—" One of the most dreadful complications of measles, is that with an ataxic or malignant fever. Individuals naturally lively and delicate, as those in infancy, are more subject to it. It is one of those unlooked for anomalies in the vital properties. The functions of the brain are disturbed ; respiration is deranged, and becomes extremely constrained ; in a word, the patient is *quickly* reduced to the last extremity, if something be not done for his relief. The most active treatment is here indispensably necessary to sustain life, which is shaken to its very foundation." Subsequently he states, that " infants naturally weak, or who live under the influence of debilitating causes, are exposed to an adynamic or putrid fever during the course of the measles. One detects this dangerous complication by the change in the form and color of the spots ;—from being at first prominent, and of a lively red, they become more depressed, pale, and livid ; in which case, we must prevent the prostration of strength in good time, *and direct the eruption back again towards the surface of the body* by the use of tonics, such as wine, bark, and camphor ; the greatest advantage may be also obtained by epispastics, and above all, by blisters." At page 294, he again observes, " there are infants in whom the progress of the eruption is arrested, the spots disappear, and pains in the chest, more or less severe, manifest themselves ; respiration is oppressed ; peripneumony declares itself ; suffocation is threatened."

Mr. Burns of Glasgow, in detailing the symptoms of measles, states, that " sometimes the eruption suddenly and prematurely recedes, or never comes fully out. Both of these cases are unfavorable, the fever is high, and the oppression great." It will be seen, by consulting the report of diseases treated at the New Town Dispensary of Edinburgh, during the last six months of the year 1816, published in the 13th vol. of the Edinburgh Medical and Surgical Journal, that this form of the disease was very prevalent, and that few children recovered ; most of those attacked were of feeble habit, or weakened by previous illness, " but others appeared to have been quite healthy when exposed to the contagion." " Those affected in this way were chiefly infants, but a few were children from four to seven years of age. They were ill longer than usual, generally five or six days, before any eruption appeared, having the usual catarrhal symptoms, with much debility and drowsiness ; frequent vomiting ; generally frequent, and sometimes bloody stools ; quick pulse, and white tongue, *without much heat of skin*. When the rash appeared, it was at first less distinctly circumscribed, and afterwards less elevated than usual, of a darker color, and attended with less heat of skin. After its recession, the patients were more or less distressed with cough and dyspnoea, generally with diarrhoea, and almost always with a frequent ineffectual attempt to vomit. The pulse and breathing became very quick ; the tongue, after losing the white crust which had covered it at the beginning of the disease, became dry and hard ; the pos-

ture indicated much debility ; the countenance had the languid, vacant expression of typhus ; and a dark-colored fur usually gathered on the lips and teeth. In all these cases, there was a degree of drowsiness approaching to coma ; and in a few, this state appeared to be blended with delirium.

“ In two or three instances, infants exposed to the contagion of measles, became affected with catarrhal symptoms, fever, drowsiness, quick and oppressed breathing, and died, without any eruption being observed.

“ In the cases of speedy recession of the rash, if the cough and dyspnoea were urgent after its disappearance, *death almost universally ensued*, from the first to the fourteenth day after that change. But those in whom the pectoral symptoms were less distressing, recovered from the state above described, under the use of wine and cordials, which, as far as we could judge, were as decidedly beneficial in these as in any other cases in which we have seen them used. It should be mentioned, however, that one or two, who could not be prevailed on to take either food or medicines, gradually mended without any crisis being observed.

“ On opening the bodies of those who had died of this form of measles, a considerable accumulation of mucus in the bronchia was always found. In two infants, under a twelvemonth, there were marks of inflammation of the lungs, (which in one of these had proceeded to ulceration,) and a good deal of water was found in the pericardium. In one child, four years of age, there was such a congestion of blood in the lungs, that a large portion of them sunk in water.

In several cases, in which the eruption had almost or entirely disappeared on the second day, it re-appeared that night, after the use of the warm bath, and an opiate, and continued nearly the usual time.

An aphthous state of the mouth and tongue occurred pretty frequently, but was not confined to the unfavourable cases.

The circumstances of the livid colour, and rapid recession of the eruption, of the succeeding typhoid state, and the irritability of stomach attending that state, seem to point out a resemblance between the cases of measles now described, and the worst cases of scarlatina.

I scarcely think that such appearances support the wine and cordial treatment, which, we are told, was had recourse to in these cases. It has fallen to my lot to treat a considerable number of cases of this kind ; and the plan which experience has led me to adopt, is, first to try the warm bath with stimulating frictions ; but if the symptoms be very threatening, such as coma, convulsions, or asphyxia, or an approach to these states, the best practice, if the patient be an adult, or even a child, if a vein can be found, is to bleed at once. Several interesting cases might be detailed, shewing the advantage of this plan ; I shall now merely give a short sketch of one. A few years ago, I was called suddenly to see a child in measles on the first day of the eruption ; every appearance had been so favourable up to the moment of the sudden recession of the rash, that the family had not applied for medical advice. On my arrival, the eruption, which had been extensive, and of the usual colour, was no longer to be seen,



although it still was to be felt. The child was under three years of age, and of good constitution; it had had three or four strong convulsions in the course of rather less than an hour, and was now comatose; one pupil dilated, while the other was of the natural size; the hands were clenched. A good sized vein being found in the arm, was instantly opened, and from eight to ten ounces of blood abstracted, when the breathing, and every other appearance, became more favourable; the pulse, which was under sixty, rose gradually as the bleeding went on, and the child soon became quite sensible. So far from debility following it was necessary to apply leeches next day to the head; the child made a rapid recovery, and was running about in the course of a week.

In every respect, the treatment must be conducted in the manner detailed in congestive fever, as well as in the congestive form of scarlatina.

The inflammatory disease is the form most generally met with; we have the usual eruptive fever, preceded by rigors, depression, and debility; along with the fever, the patient has a dry cough, with hoarseness; frequent fits of sneezing and cryza. He also complains of giddiness and pain in his forehead, as well as in the back; his pulse is various, sometimes frequent and small, or frequent and strong, often it is irregular and oppressed; the bowels are generally confined, and the evacuations fetid. In the course of the second, third or fourth day of the fever, the symptoms run higher; the eyes are tender, red, watery, and inflamed; the dyspnoea, which was slight at first, is now more severe; the patient complains of tightness of the chest, pain, and oppression at the præcordia. The eruption appears first on the face and neck, in twenty-four hours it is found on the breast, and afterwards gradually spreads over the rest of the body; it consists of small red papulæ, slightly elevated, resembling recent flea-bites; these soon form themselves into extensive patches, irregular in shape, their margins having somewhat of a crescentic appearance. The eruption is sometimes very extensive, at others slight. The throat, when examined, will be observed to be covered with small red patches, occasioning difficult deglutition.

Sometimes immediately before the eruption comes out, the patient is seized with violent sickness and vomiting; sometimes with convulsions; but if the eruption subsequently comes out freely, these symptoms abate.

In a great majority of cases, the disease is rather slight, and the internal disturbance, which is discovered by the symptoms already described, is generally very much appeased soon after the appearance of the eruption, particularly if it come out freely and plentifully. Occasionally, however, the symptoms are very severe from the beginning; the cough is frequent and harsh; there is considerable dyspnoea, with hot skin, thirst, and a quick pulse; and the child is occasionally so comatose, that this symptom early attracts our attention.

As the embarrassment of the lungs increases, which may happen in any stage, the face becomes discolored, and sometimes presents a purple appearance, and occasionally the eruption over the whole body assumes a dark color;

this is the state which is called *rubeola nigra*, and is probably that form of the complaint described by Dr. Watson and others, under the term Putrid Measles.

After the natural disappearance of the eruption, the fever, dyspnoea, and cough, in some cases increase, attended or not with considerable gastro-intestinal irritation and diarrhoea; occasionally inflammation of the eyes, and enlargement of the glands of the neck, succeed. Blistered surfaces frequently slough; and it has been remarked by Dr. Watson, Dr. Ferriar, of Marchester, and others, that an ulceration of a particular character attacks the pudendum of girls, from which few recover; three cases have fallen within my observation, two of which proved fatal; and it is my opinion that death is not owing to this ulceration, but to internal disease. Dissection, in two of these cases, displayed extensive disease of the lungs, but more particularly ulceration of the mucous membrane of the intestines, of which the preparations and drawings are in my museum.\*

*Appearances on Dissection.*—Morgagni notices the following case, which he says has been transferred from Ballonius into the Sepulchretum: "On examining the body of a person to whom it was suspected that poison had been given, the stomach was found beset with exanthemata, and the physicians were upon the point of asserting that the appearance was owing to poison, when they were informed that the person died of measles, which began to appear on the skin, and suddenly vanished."

In the examinations at which I have been present, effusions and other marks of inflammatory action have been found in the brain, and sometimes ulceration in the mucous membrane of the bowels; but I have seen no dissection in which the pulmonary system escaped. The lining membrane of the bronchia, trachea, and larynx, has not only been found in a highly vascular state, but it has been thickened, softened, and occasionally ulcerated; the ulcers are small, and generally situated near the bifurcation; the bronchial tubes are more or less filled with a matter like pus or thick mucus, as in bronchitis; the color of this secretion varies; and it is sometimes tenacious, at others not so. This condition of the air passages has always existed on both sides of the chest. In many cases, the lungs are found emphysematous, in others, inflamed in different degrees; the inflammation rarely affecting both lungs, and it is frequently confined to one lobe. Occasionally there are extensive inflammations of the pleura, indicated by effusion of serum and exudation of coagulating lymph, besides thickening of the pleura and recent adhesions; and in cases of longer standing, tubercular formations are observed in different degrees of advancement; sometimes even excavations of the lungs.

It ought to be noticed, that the inflammatory appearances in the brain and bowels, together with the disease of the substance of the lungs, and the pleuri-

\* This is the disease which has been described in the 7th vol. of the Med. Chir. Trans. of London, by Dr. Kinder Wood, who saw twelve cases, of which only two recovered. The case of recovery which I have noticed, was under the care of Dr. Moffit of the 7th Hussars; the patient was a soldier's child. The disease followed a very slight attack of measles. For an account of this singular disease, vide Vol. ii. p. 303.

tic effusion, are to be regarded as accidental circumstances; whereas the inflammation of the bronchial membrane is an essential part of the disease, and may be traced from the beginning of the complaint.

*Treatment.*—In the slighter forms of this disease, as in scarlatina, very little treatment is necessary, further than confinement to one room, the free exhibition of gentle laxatives, and low diet. The medical attendant should be still more watchful in this disease than in scarlet fever, at the period when the eruption naturally recedes, for reasons already mentioned. In the severer forms of measles, bleeding is often necessary during the eruptive fever, when the pectoral symptoms run high, and appear threatening; and also when coma and convulsions take place, both of which are more likely to happen, but particularly the latter, if the child be suffering from difficult dentition. I was called once to see a fine boy of two years of age, who, during the eruptive fever, was seized with convulsions in the night, at the period when the eruption ought to have made its appearance, and from whom nine ounces of blood were taken. Next day he had nine or ten leeches applied to his head: the symptoms were afterwards exceedingly slight, and he made a rapid recovery. He bore the bleeding without any tendency to syncope, while his brother, a boy of twelve years old, labouring also under the same disease, and who required blood-letting for pectoral symptoms, fainted upon the loss of two ounces.

When bleeding is necessary, it ought to be performed in the manner already described when treating of inflammatory fever; a sufficient quantity should be taken as early as possible in the disease, and the operation ought to be repeated at short intervals; but when the bronchitic symptoms have been allowed to go on neglected till the air passages are gorged with mucus, bleeding is a very questionable remedy, and no doubt often does irreparable mischief, for reasons which will be fully noticed when treating of bronchitis. Leeches are to be employed as directed in scarlatina, and also blisters.\* Antimony is also highly serviceable; and opiates in the last stage, when there is restlessness and irritability, if the air passages are not filled with mucus. The warm bath affords much comfort to the patient in all the exanthemata, every night, or every other night, after the eruption has declined, and when the cuticle is exfoliating. During recovery, great attention should be paid to the diet, clothing, and state of the bowels, so as to avoid the disagreeable circumstances which so often follow the exanthemata, viz., the formation of tubercles in the lungs; inflammation and ulceration of the mucous membrane of the bowels, producing the disease which is called *tabes mesenterica*, and also glandular affections of the neck, inflammation of the eyes, and chronic eruptions of the skin.

This is a very different line of treatment from that which is still recommended by Dr. James Hamilton, jun., and which is founded upon the most curious notion that can well be conceived, viz., that the bad symptoms in measles are not

\* When a blister is applied to a child, under any circumstances, the part should be carefully examined daily by the medical attendant, but more particularly in the eruptive fevers.



occasioned by inflammation, but by "*torpor of the lymphatics.*" But as this statement may not be credited, Dr. James Hamilton, jun. shall be allowed to speak for himself. At page 377 of the work already quoted, last edition, the following passage will be found: "As the debility which always attends and follows measles is the most prominent feature in the progress of the disease, it is not easy to understand the reasons why practitioners have been led to overlook so obvious a circumstance. The objections to wine and nourishing diet, which it is so often necessary to combat, probably arise from the supposition, that the frequency of the pulse and cough are the effects of inflammation, when in fact they are occasioned by *the torpor of the lymphatics!!!*"

---

### SMALL-POX.

THIS disease commences with rigors, followed by febrile symptoms, which continue from forty-eight to sixty hours, and even longer, before the eruption appears; and it is no uncommon thing for children to be seized with convulsions during this period. The attack is frequently very sudden; vomiting generally occurs; there is pain in the head and back; and the patient complains very much of oppression at the præcordia, and a pungent pain in the pit of the stomach, much increased on pressure; there are also decided marks of general disease of the mucous membranes, and more particularly that of the bronchi, announced by dyspnœa, cough, and wheezing.

Physicians have divided this disease into two kinds, from the form which the eruption assumes. When the pustules do not run into each other, the disease is termed distinct; when they are very numerous, and run into each other, it is termed confluent; all the symptoms being more severe, and attended with more danger than in the former.

The eruption first appears on the face, in the form of small red papulæ. About the third day, a vesicular appearance is observed on the top of each spot, which is soon depressed in the centre, and is found to contain a transparent fluid, with an inflamed circular margin. About the sixth day the eruption loses the depression in the centre, and instead of serum, will now be found filled with a puriform matter. When the pustules are numerous, the parts swell much, and the neighboring skin is of a red color, from the extension of the inflammation. About the seventh day, some of the pustules on the face burst, and upon the eighth or ninth they begin to dry and scab over the rest of the body. The swelling which affects the face, hands, and feet, more severely than other parts of the body, gradually declines; the skin remains of a dark brown color after the scabs fall off, and it is many weeks before the surface recovers its natural appearance.

This is the course which the distinct small-pox generally runs, and when treated properly it is rarely fatal, every thing depending upon the state of the lungs and brain.

In the confluent small-pox, all the precursory symptoms are more severe ; the eruptive fever runs higher ; the pain in the epigastrium and dyspnœa are more complained of ; convulsions and delirium also more frequently take place ; and the patient runs more risk of secondary fever, and danger from extensive inflammation, ulceration and sloughing of the skin.

In both varieties, but particularly in the confluent, copious salivation sometimes takes place, and soreness of the throat is a marked symptom ; upon examining the mouth and fauces, vesicles or pustules may be observed as far down the pharynx as the eye can reach. I have seen the same appearance on the mucous membrane of the rectum, in a case of small-pox in which there was prolapsus ani ; and in the year 1823, a great number of my pupils had an opportunity of seeing a similar case. I am not aware whether this appearance in the fauces and rectum follows an increase and decline simultaneously with the eruption on the skin. In some severe cases, petechiæ are seen, when the eruption has begun to decline ; bloody vomiting and diarrhœa with tenesmus, take place ; and the dyspnœa frequently increases as the disease advances.

The inflammation in the skin is frequently so deep and severe, that the death of a portion takes place, perhaps of the cellular substance, as in carbuncle, and this is one cause of what are called pock-mocks.

In Small-pox, as well as in other acute diseases, there is a congestive form, in which the system is unable to raise sufficient re-action ; there is consequently more oppression ; the surface is pale ; the eruption flat, and never matures properly ; the dyspnœa is very considerable ; and I verily believe this is the form which is called the most malignant.

In severe cases, death takes place before the eighth day, but, generally speaking, the fatal event happens sometime between the tenth and seventeenth days. The proportion of deaths is said by Dr. G. Gregory, who must be a very good authority upon this subject, to be about one in every six persons who receive the Small-pox in the natural way. But during the prevalence of an epidemic, the mortality is sometimes one half. Indeed, it appears that during a severe epidemic at Ceylon in 1819, the number of native inhabitants taken into the hospital at Kandy, amounted to 931 ; of these 525 died. Since the publication of the first edition of this work, I had occasion to attend 50 cases of Small-pox, all of which were distinctly traced to the imprudence of a woman who exposed her unvaccinated child to the contagion, when visiting a sick friend. Of these 50 patients, 35 had gone through the process of vaccination ; 15 had never been vaccinated, (they were infants under one year of age.) All the protected cases recovered. Of the 15 unprotected cases, 10 died. Three only of these had the disease slightly. Of the 5 children who survived the attack, one did not recover perfectly, and died of chronic bronchitis some months afterwards.

*Appearances on Dissection.—Head.*—I have seen marks of inflammation of the membranes, evinced by a considerable arborescent vascularity on the surface of the brain, the vessels of the pia mater being greatly loaded with blood ;

together with effusion under the arachnoid, and into the ventricles. But it becomes me to speak with diffidence with respect to this part of the subject. Dr. George Gregory says, at page 105, that he has "never been able to trace any morbid appearance in the head," which is rather at variance with the results of my limited experience, and with a statement which he subsequently makes at page 108. In directing the mode of treatment, he says, "It is to be remembered also, that in Small-pox, fully as much as in any other form of fever, there is a tendency to congestions and inflammations in the head and thorax." "A patient," (says Batting, p. 76,) "during the cure of a very extensive fracture of the skull, was seized with Small-pox, &c. &c. It was curious to observe in this patient, the appearance of variolous pustules upon the granulations of the dura mater."

Although I have been prevented, by the impatience of surviving friends, from opening the head as often as I could have wished, yet many opportunities have been afforded me of examining the contents of the thorax and abdomen. I have seen pustules in the pharynx, larynx, trachea, and œsophagus, in those who died on or before the twelfth or thirteenth day, on some occasions closing up the larynx. The mucous membrane of the bronchi very vascular, and the air tubes completely gorged with matter, most frequently of a reddish color; but in no instance have I been able to discover a pustular appearance below the bifurcation. The substance of the lungs congested with blood, and in the first and second stages of inflammation; and in one instance there was pleuritic effusion. On examining the body of a deformed girl, who died under an attack of Confluent Small-pox, the peritoneum and pleura were studded over with small circular spots, which looked like a faded eruption, but perhaps they might have been produced in the manner which we sometimes see in cases of purpura. I have observed nothing in the stomach to account for the severe burning pain complained of in the epigastric region; the mucous membrane has certainly shewn vascularity, and has been covered with a viscid exudation, the follicles being much increased in size, which appearance often extends throughout the whole intestinal tube; and in three or four instances, I have seen ulcers having a pustular appearance, with a depression in the centre, in the jejunum, ileum, and also in the large intestines, of which the preparations and drawings are in my museum; and some of them were surrounded by an inflammatory areola.

*Treatment.*—Small-pox under every form is a serious disease, for however mild it may appear in its attack, its consequences are always to be dreaded. The confluent, however, is a very dangerous disease; and we are to be guided in the treatment by observing the state of the brain, and the organs contained within the thorax, as well as the condition of the surface of the body.

It was formerly the custom to keep patients very hot, and to employ stimulants; and the consequence was, that the mortality was immense; but for many years past, patients have been kept cool, and the antiphlogistic regimen recommended, but, I fear, too little practised, from the dread of putridity. Bleed



ing has been often employed, and strongly recommended, in this disease, particularly during the eruptive fever; but it has as often been condemned, because it destroyed that strength, which, it is alleged, is so much required in the latter stages of the disease. But the same language is used in the purest inflammatory fevers. In all the successful cases of confluent small-pox occurring in adults, which I have treated, except one, amounting in all to about eighteen, bleeding was employed, and largely employed, in the eruptive fever, to moderate what was thought to be local inflammation, without suspecting that they were cases of small-pox; several of the sufferers were my pupils, who had had themselves bled before I was called in. In a number of instances blood has been drawn even after the appearance of eruption, and with decided benefit; but upon the whole, I am then disposed to trust more to leeches for relieving local inflammations. The state of the throat and air passages requires daily and minute examination, and after the eruption comes out, the application of leeches is often necessary to the neck, and also to the chest, to reduce inflammation. Bleeding before the appearance of the eruption may be expected to moderate that symptom, which is of the greatest consequence, as many die from the severity and extent of the external inflammation. The appearance of petechiæ does not prevent me from ordering the application of leeches, in cases which require this practice. With respect to other points of treatment, they are similar to those which have been recommended in scarlatina, measles, and other febrile diseases. I may be allowed, however, on this occasion, to insist on the propriety of trusting to nature a little more than is generally done, when the patient begins to convalesce, avoiding attempts to hurry it on, and restore the strength, which, in a great proportion of cases, is the cause of secondary fever. A number of disagreeable circumstances often take place as sequels of small-pox, and the most painful one is the formation of boils on various parts of the body, and sometimes even carbuncles, of which there are successive crops tormenting the patient for weeks. Glandular affections also frequently follow, as well as, ophthalmia tarsi, and ophthalmia purulenta. I can state from experience, that it is a good plan to open the pustules on the face early, in order to prevent marks.

---

## MODIFIED SMALL-POX.

THERE are several circumstances, which are said in medical language to modify this horrible disease. The mysterious power of vaccination in preventing small-pox is now admitted; experience, however, has taught us, that this antidote does not always succeed; but the generality of cases of small-pox which follow vaccination are very mild. Individuals are sometimes attacked also a second time with small-pox, and in my comparatively limited experience, I have known upwards of twelve well authenticated instances. The

first attack is generally supposed to modify the second, and to render it milder; but it is curious, that all my cases of secondary small-pox, with the exception of two, were remarkably severe; whereas I have never seen a severe case of small-pox after vaccination.

Previously to the great discovery of Dr. Jenner, respecting the power of vaccination in preventing small-pox, the disease was modified, and rendered less severe and fatal, by inoculation. This practice had been long followed in the East, and was introduced into this country from Turkey, by Lady Mary Montague.

An interesting question arises, to determine why the inoculated small-pox should be so much milder than the natural?

This is, perhaps, easily answered. A proper season of the year is chosen for the operation; the patient undergoes a certain preparation, and his bowels are particularly attended to.

In the modified disease, the stages are all shorter, and the eruptive fever is slighter; the convalescence is less tedious, and the sequelæ are not so troublesome.

This disease must be treated according to the general principles hitherto laid down.

## CHICKEN POX.

THIS disease, known also by the name of varicella, has been often confounded with small-pox. Those who maintain the identity of the two diseases, and who have figured in the controversy that has been so long carried on, have nevertheless completely failed in proving their position with respect to one point, while they have succeeded in another, apparently without being aware of it. Looking at the diseases symptomatically, there is no doubt a striking difference. The symptoms are all much slighter in chicken pox; the eruption is vesicular, and there are repeated crops; and further, this disease is rarely attended with danger; but a pathological eye cannot fail to discover a marked resemblance. The only questions to be determined are the following: Does an attack of the one disease prevent the other? Will matter taken from small-pox produce varicella, or from varicella small-pox? Extensive experience enables us to answer both in the negative, and therefore they cannot be identified any more than measles or small-pox.\*

With respect to the treatment of varicella, it is only necessary to mention, that it must be conducted in the same manner with other slight eruptive fevers; and it should be remembered, that some local inflammation may arise even in the very slightest of them. I have known two fatal cases of varicella, one from inflammation of the substance of the lungs in an adult, the other from in-

\* Vide Dr. Hennen's papers and experiments, in Ed. M. and S. Journal, Vol. xiv. p. 409.

inflammation of the membranes of the brain in a child eighteen months old.\* Since the publication of the first edition, I have been reminded of a third fatal case which occurred in 1825, in a child five months old. Traces of inflammation were found in the chest and abdomen. The head was not examined.

### MILIARY FEVER.

THIS disease is characterized by an irregular eruption, of exceedingly small round vesicles of the size of millet seeds, and which feels, when the hand is passed over it, as if there were small grains of sand beneath the cuticle. Each vesicle is surrounded by a slight inflammatory blush.

This disease is said to be idiopathic, as well as symptomatic. There can be no doubt whatever, that an eruption of this character occasionally appears in the course of all fevers and inflammations; and in such cases, attention ought to be directed to the original disease. It is also considered one of the diseases of child-bed. Since women in that state have been treated in a proper manner, by avoiding hot stimulating drinks, and by admitting cool air, it is not very frequently met with. It is described by authors to commence with rigors, sickness, and languor, approaching to syncope, quick pulse, heat of skin, and thirst. The eruption does not usually appear till four, five, or six days after the commencement of the febrile attack. Previously to its appearance, there is a sense of pricking, tingling or itching of the skin, sometimes attended with a benumbed state of the extremities. The patient is greatly oppressed and complains of a sense of weight about the chest; the spirits are low, and a profuse perspiration takes place, which is frequently remarked to have a sour smell. At length the vesicles form into small scales, and fall off in a few days.

The eruption is generally distinct, but sometimes confluent; it is said rarely to affect the face, and different crops may appear in the same fever; it attacks those most frequently, who have been previously weakened by disease, fatigue, or long continued sweating, or who have had a hot regimen. The miliary vesicles often occur during the course of many of the puerperal diseases, such as milk fever, inflammation of the brain and peritoneum.

Mr. Burns, in his *Principles of Midwifery*, p. 420, says, "Whether the miliary fever be idiopathic or symptomatic, the treatment is the same." If he mean to state, that slight miliary eruption is to be treated in the same manner as miliary eruption "depending (to use his own expressions,) on fevers connected with a morbid state of the peritoneum or brain, which generally prove fatal," I cannot concur with him, as the eruption is to be regarded only as an accidental symptom of another disease

\* It has been thought proper to pass over vaccination, as it forms a part of surgery, rather than of physic; and it has been determined not to dwell upon surgical subjects in this work.



*Treatment.*—If this disease occur in the course of inflammation of the peritoneum, brain, &c. the particular disease ought to be treated in the proper manner, without reference to the eruption. If not, the bowels are to be regularly attended to, sweating is to be avoided, as well as every thing which heats the patient; and indigestible food must be prohibited. Whenever the patient is found perspiring, the linen should be changed in a careful manner, and the body properly dried and rubbed with a soft towel; in this case sulphuric acid will be found very useful, and there can be no objection to the moderate use of wine and bitters.

---

### ROSEOLA.

Is a fever attended by a rose colored efflorescence, without wheals or papulæ, and apparently not contagious. It has often been confounded with measles and scarlet fever, and I have seen the wisest heads baffled in determining the point; in one case in which such a division of opinion took place between two physicians, a third declared that the patient labored under small pox, and the result of the case proved that his opinion was correct.

This is a disease which may frequently be traced to indigestible matter, and particularly fruit, in the stomach and bowels; therefore the treatment is very simple, so simple, that even in the higher ranks, medical men are seldom consulted; and they would probably be still less frequently called, only that parents are afraid that it is scarlet fever. Confinement, attention to the bowels, and avoiding solid animal food for a few days, are the best means which can be adopted.

Willan and Bateman have given an account of *seven varieties* of this disease, but no practical benefit can be derived from such minute hair-breadth distinctions as these and other skin nosologists have drawn.\*

---

### URTICARIA.

THIS disease is known to the vulgar by the name of nettle rash, and is distinguished from other febrile eruptions, by circular elevations of the cuticle, of a red color, with a white spot in the centre, and is usually termed a wheal; and here again Willan and Bateman have unnecessarily described six varieties.

The eruption is generally preceded by marks, the most distinct, of gastro-intestinal irritation and fever; and the patient is affected with restlessness, oppression, languor, and want of appetite; his tongue, however foul, will in general be found red at the tip, and round the edges. If the eruption be very ge-

\* It affords me great pleasure to refer to Mr. Plumbe's Practical Treatise on Diseases of the Skin. That gentleman has taken up correct views of the subject, and treats of all the affections pathologically, therefore he has few sub-divisions. It is the best work we possess on the subject.

neral, the patient suffers much distress from the heat and itching of the parts, but the internal disorder will be found to be relieved. Sometimes the rash appears only when the individual is heated by exercise, or by wine, or when he is undressing himself; and it is also frequently excited in a fresh part, by friction or scratching. This is an affection which is often produced by eating particular articles of food.

It appears to me, that individuals who are frequently subject to this affection, and others of a similar nature, during youth, are those who in after-life are affected with gout.

It is sometimes difficult to distinguish urticaria from another very painful and troublesome affection, which is known by the name of *erythema fugax*; but this is a matter of no practical importance, as both eruptions are produced by the same causes, and cured by similar remedies.

Urticaria may continue for an indefinite period, and may be reproduced in particular constitutions every time the stomach is disordered.

*Treatment.*—Nothing is more simple than the management of a case of urticaria; but much more depends upon the patient himself, than upon the remedies which a physician may prescribe. The patient must find out, by experience, the articles of food which disagree with him, and he must have sufficient resolution to avoid them for a time. It should be impressed upon young practitioners, that danger sometimes proceeds from the repulsion of the eruption by cosmetics.

A very beautiful young lady was frequently troubled with febrile symptoms and this rash. She was attended by an eminent physician, who gave her a large bottle of a strong solution of sugar of lead, with directions to sponge her body with the wash when her skin was very itchy. Upon the first occasion, she stripped herself, and applied it as extensively as she could, and it surprised her that the itching suddenly ceased; upon examination, the eruption, which was very vivid before, had now almost entirely disappeared. She instantly felt sick, oppressed, and fainted; and continued for such a considerable time in a state of insensibility, that her attendants were doubtful of her recovery. She survived, but has not since known what it is to enjoy a day's good health.

Besides avoiding every thing that disagrees with a patient, it may be mentioned that gentle laxatives are essential remedies; and that an emetic is highly useful, if any indigestible matter be still in the stomach.

---

## THE PLAGUE.

THE disease which is now to be shortly described, appears to be an endemic fever, attended during its course by buboes, carbuncles, or some eruption on the surface of the body. It is, under certain circumstances and seasons, highly contagious; and it would seem also to be occasionally epidemic.

The accounts we have of the phenomena of this disease are so contradictory, and the history of morbid appearances are so few and meagre, that I have not sufficient data before me wherewith to form pathological descriptions.

The plague, it would appear, is sometimes very mild, at others very severe; and if it be a fever, of which I have now no doubt,\* the symptoms must not only vary in intensity, but they must also have a very wide range of character. It must have varieties and shades arising out of one organ being more severely affected than another, as well as from local congestions and inflammations. The plague appears to be modified also by season, situation, and habits of individuals. It is not to be wondered at, therefore, that different writers should have given different histories of the symptoms and progress of this disease, but as yet, we have no pathological description that can be depended on; therefore, my observations must be brief.

It seems to be the general opinion, that the plague is nothing more than a malignant typhus, and the only peculiar symptom that has been described is the bubo, carbuncle, or the appearance of some eruption on the surface of the body; and all writers agree in opinion, that the safety of the patient very much depends upon the suppuration going on speedily and kindly. The plague, therefore, seems to be closely allied to the exanthemata, and more particularly to small-pox.

The disease appears to be ushered in by rigors and oppression, followed by heat of skin, great prostration of strength, giddiness, and headache; the expression of the countenance is besotted, and the eyes have a muddy, glistening appearance. It is stated, however, that in some cases there is a ferocious aspect; in others, the patient's look is subdued. The pulse varies much; it is sometimes quick and full, at others, quick and small; sometimes described as being hard, at others, soft. The intellect is sometimes clouded; at others, there is insensibility and fierce delirium; occasionally stupor takes place, and in some cases the functions of the brain remain distinct and clear. The patient, in general, seems indifferent respecting his fate; the tongue is at first moist, although it may be more or less loaded; there is sometimes constipation, at others diarrhœa; the stools are always highly offensive; the stomach is in general very irritable, every thing taken being almost instantly rejected.

In a few days from the first attack, generally the third, pains, often acute, are complained of in the groins and arm-pits; and unless the swelling and suppuration of the glands go on quickly, death soon takes place. Sometimes carbuncles appear with or without the buboes; but petechiæ more frequently than carbuncles. Discharges of blood from the stomach and intestines often take place in the last stage. Sometimes the disease is very rapid in its progress; frequently it runs its course in thirty hours. It is said that if the patient survives the fifth day, the bubo being completely formed, he may be pronounced to be

\* I have had the pleasure of enjoying several communications with Dr. M<sup>c</sup>Guffee, who resided many years in Turkey, and who has seen the disease. It is his decided opinion, that the plague is a fever attended by buboes, &c.



doing well, if not actually out of danger. As in the acute eruptive diseases, there are two periods fraught with greater danger than others, viz., that at which the bubo makes, or ought to make, its appearance, and that at which it ought to be matured.

The convalescence, as in all severe fevers, is very slow, which is attributed to the extremely debilitated state in which the patient is left; but there can be little doubt that a great deal is generally owing to bad nursing, and want, perhaps, of sufficient comforts.

It is a curious and interesting fact, that Sir James M'Grigor and Sir John Webb, the former the director-general of the medical department of the army, the latter director of the medical department of the ordnance, should have distinguished themselves in the same field of investigation, having been both employed with our Egyptian army thirty years ago, when they displayed that talent, zeal and humanity in the performance of their duties, which endeared them to all who were placed under their care. It was there these distinguished persons gave evidence of the great powers of mind and regular habits of business, which marked them out, as men admirably qualified for the high situations in which they have been subsequently placed, and which they have filled with so much honor to themselves, and benefit to the service. Their statements respecting the plague, will be read with much interest and advantage.\*

*Treatment.*—Sydenham recommended free and repeated venæsection in this disease, during what may be called the eruptive fever, and it has occasionally been practised since his time; but even Sydenham himself seemed latterly to prefer sweating the patient, under the idea of withdrawing the pestilence in that way from the body, which weakened him less than blood-letting. Some individuals condemn bleeding entirely. The same difference exists with regard to purging. Cullen condemns both, but recommends the violence of re-action to be moderated, as far as it can be done, "*by taking off the spasm of the extreme vessels.*" The application of oil to the surface of the body is believed to be a preservative, and it has also been employed to cure the disease; but even upon these points, such opposite statements have been promulgated, that we have no means of forming correct opinions. A great number of other remedies have been strongly recommended, as mercury, wine and bark, camphor, opium and æther, emetics, diaphoretics, and the cold affusion; and if my notions of the disease be at all correct, there are cases and stages in which several of these remedies, if not all of them, may prove highly beneficial; but there are others in which they must have the very opposite effect. For example, if there be violent inflammation and congestion of the brain, no one will say that wine, æther, bark, or camphor, are the proper remedies; but in which cold applications to the head, and the action of mercury, might be beneficial. In the last stage of the disease, the lancet would be most improper, when wine, æther, opium, and even brandy itself, may snatch the person from the grave. If the

\* Sir James M'Grigor's Medical Sketches of the Expedition from India to Egypt. Sir John Webb's Narrative, 6th vol. Medical Transactions.

stomach be irritable, which it almost always is in this disease, no one, I hope, would think of making it more so by exhibiting emetics and large doses of bark. It is to be feared that the recommendation and condemnation of various important remedies have taken place, without reference to the stage of the disease, the particular organ or organs affected, the peculiarities of the prevailing distemper, as well as the idiosyncrasy of the patient ; but it becomes me to speak with diffidence upon a subject, with which I must acknowledge myself to be very imperfectly acquainted.

The reader who wishes for more minute information, must peruse the various works published upon this subject ; or a most excellent abstract of them, in the 3d volume of Dr. Mason Good's Study of Medicine. The chapter on the plague appears to me to be the most meritorious part of his work.

## PART II.

---

DISEASES OF THE ORGANS CONNECTED WITH THE DIGESTIVE SYSTEM.





## CHAP. I.

### DIFFICULT DENTITION.

---

FEW children go through the process of detention without some suffering ; and when teething is difficult, a variety of complaints arise which come under the denomination of infantile diseases. These are fever, determination to the head, convulsions, cough, bowel complaints, cutaneous and glandular affections, inflammation of the eyes, and soreness behind the ears.

Authors have long remarked, that children who teethe at an early period, have least suffering ; and the same observation has been made with respect to those who have a considerable flow of saliva. There have been instances of children born with teeth, which happened, it is said, to Richard III. and Lewis XIV., and Haller has cited a considerable number of similar cases.

Some infants cut the first pair of teeth by the end of the third month ; in other instances, not until they are sixteen or eighteen months old. In general, however, they are cut between the sixth and eighth month. The two centre incisors of the lower jaw commonly appear first ; in the course of a month, their opponents in the upper jaw protrude ; after this, the two lateral incisors of the lower, and then those of the upper jaw, appear. Between the twelfth and sixteenth month, the anterior grinders of the lower, and then those of the upper jaw are cut ; subsequently the cuspidati or eye-teeth protrude, and after these the posterior grinders ; so that children usually have the first set of teeth (twenty in number) complete by the time they have attained the age of two years, or two and a half. There are generally intervals of several weeks between the cutting of each pair.

The formation of each tooth goes on in a membranous and vascular sac, which is firmly united to the gum ; and if we attempt to tear the gum from the jaw, the sac is brought along with it. This sac, it would appear, subsequently becomes absorbed ; but when it is thicker than usual, more vascular, and long of being absorbed, it is one of the alleged causes of difficult detention. The irritation produced by the pressure of each tooth against the gum in its advancement to the surface, particularly when the child teethes late, and the gums are hard and cartilaginous, also occasions the different phenomena which are ranked under the name of difficult detention.

A child under such circumstances is observed to be restless, fretful, and feverish; to sleep little, and is often seized with sudden fits of screaming. The bowels are out of order, and the evacuations fetid. On some occasions, marks of determination of blood towards the head take place, viz. great restlessness, flushed face, sudden fits of crying, apparent suffering when brought into the erect posture, startings, slight spasmodic movements of the muscles of the face, and even general convulsions.

Many children, whenever they cut a tooth, are teased with a cough, depending on bronchitic irritation or inflammation. This is announced by wheezing. Others suffer from constipation, while many are afflicted with troublesome diarrhœa.

Cutaneous and glandular affections are often observed during difficult dentition. The glands of the neck, and the sub-maxillary, are those generally affected, and they sometimes suppurate. Of the eruptions, the herpes larvalis and lichen are those most commonly seen.

Occasionally there is inflammation of the eyes, particularly that form which is termed ophthalmia purulenta; and sores take place behind the ears, which seem to operate beneficially. This statement will shew the propriety of examining the mouth, when we are called to a child labouring under these, or any other affections, during the period of dentition; and it may be well to mention here, the appearances the gums will present under such circumstances. The mouth may be very hot, and on examining the gum over the tooth which we suspect, it will be found to be elevated, very red, sometimes white and shining: the ridge or seam, which runs along the jaw in the direction of the teeth, will in general be found to have disappeared. Under such circumstances, the tooth may be pronounced to be far advanced; at all events, it is well to be able to say whether it be near at hand or not, as mothers are often disappointed if the tooth over which the gum is cut, does not shew itself in a day or two; whereas, if they are told beforehand that it is not so near, they will in general be satisfied. The best remedy is to divide the gum, down to the very tooth, by crucial incisions. Many people entertain a dislike to this operation, from the idea that the gum is hardened by the cicatrix; but they may be safely assured that this is not the case, and that the tooth will be advanced, certainly not retarded, by the scarification. If the operation be effectually performed, it constitutes the principal part of the treatment; should the gum even heal immediately, the bleeding will remove the local inflammation, upon which the febrile symptoms frequently subside. The bowels must be kept freely open, and the tepid bath is often of great service. If the face be flushed with other marks of determination to the head, the application of cold may be tried, the child should at least sleep without its cap, and use a hard pillow; frequently have I seen it advantageous to change a down pillow for one filled with fine shavings. It is probable that some of the serious affections of the brain to which children are liable may be attributed to warm caps and soft pillows. The bowels must be more freely acted upon; and if these means do not succeed, it will be well to apply leeches to the feet, which



may be subsequently placed in warm water, for the purpose of encouraging the bleeding; besides which, the hæmorrhage is better under command upon the application of a bandage. Many practitioners are heard to complain of the great difficulty in stopping the bleeding in young children, but I never experienced any myself. In the *first* place, we ought always to point out the situation where the leeches are to be applied, which I take care shall be, if possible, over a bone, against which pressure can be applied. *Secondly*, not to apply too many at a time: it is rare to find more than one orifice troublesome, from which the bleeding will be easily suppressed, by gently pinching the skin between the finger and thumb for a few minutes. I have never been obliged to use the actual cautery, or even caustic.

We are often not called, however, till convulsions have actually taken place, which are to be treated in the manner to be subsequently described in the 2d volume. I may however, mention here, that the child should be put into a warm bath as soon as possible; the face sprinkled with cold water; and if a fit should continue long, and threaten danger, a vein should be opened on the instant. Should the external jugular be readily observed, blood may be drawn from it; but if a vein cannot be found, the hot bath and stimulating frictions must be trusted to till leeches are obtained. Great attention should be paid to keep up a brisk action in the bowels, by means of suitable doses of calomel and jalap, or calomel combined with rhubarb or scammony, together with castor oil and injections; but all these means will be of no avail unless the gums be freely scarified.

Cough is occasionally a troublesome attendant on teething, and practitioners will be found, in general, to act empirically, unless they are able to ascertain whether it depend upon any diseased action in the lungs, or merely upon irritation about the epiglottis and pharynx. If the latter, a common cough mixture may do good; but it will be inefficacious, perhaps injurious, if the cough proceed from bronchitis, which may sometimes require the application of leeches or of a blister, or counter-irritation produced by a mustard plaster, or the ointment of tartar emetic. If the lungs be very much loaded with mucus, which is easily ascertained, an emetic will be very serviceable; but the treatment of bronchitis need not be dwelt upon in this place. It is only necessary to state the general principles, with reference to the affection now under consideration.

When a child, who is suffering from difficult dentition, has diarrhœa, we should not be in a hurry to check it, particularly if there be marks of determination to the head. The bowel complaints of children are of so much importance, that it is necessary to treat of them in a separate article, with a view to point out their pathology; but it must be mentioned in this place, that the best practice is to exhibit a little castor oil in the first instance; and if there be any pain in the abdomen, warm fomentations are to be used; should there still be signs of suffering, a leech or two may be applied, followed by very small doses of Dover's powder, or a drop or two of Battley's sedative solution of opium.

It is very fortunate that children, upon the occurrence of the most trifling febrile symptoms, or disorder of the bowels, are liable to eruptions on the surface,

because they act beneficially by removing irritation and increased action, on many occasions inflammation itself, from internal organs. When these eruptions take place during the course of dentition, it will almost always be found best not to meddle farther with them than to enjoin cleanliness; indeed, on many occasions, do what we will, the eruption continues, the child becoming better between the periods of cutting teeth. I have frequently seen great mischief done when external applications had the effect of repelling the eruption, and on more than one occasion death itself. In "*porrigo larvalis*," when there is great heat, itching, and inflammation of the part, I have found it answer well to apply leeches to the inflamed surface. The child's hands should be muffled, to prevent the face from being scratched.

Glandular affections may be safely let alone, unless they become inflamed and painful, when the practitioner will do well to apply either leeches or a soft warm poultice. If matter forms, the sooner it is let out the better, in whatever constitution it may occur, there being far more danger of leaving a disagreeable mark, by allowing the pus to discharge itself spontaneously, than by using the lancet.

We are often consulted respecting inflammation of the eyes at this period of life. Generally speaking, the disease will be found to be confined to the conjunctiva; sometimes to the tarsi; there is rarely deep-seated inflammation of the eye itself. A leech or two applied to the temple, is always safe practice, as well as a blister behind the ear: indeed nature points this out, by the relief which supervenes, upon a natural sore appearing in that situation. Let me add, that whenever we have occasion to blister a child, we should be careful that none of the powder of cantharides is sprinkled upon the surface of the plaster, which frequently creates unnecessary irritation; and above all, the blistered surface should be carefully examined every day by the medical attendant, till it shews a healing tendency, as it is apt to slough, which the timely application of a linseed poultice will very frequently check. With respect to the natural ulcerations that take place behind the ears, it is only necessary to use frequent ablution with warm milk and water, and to take care that they are not unnecessarily irritated. Great uneasiness is often produced by carelessly removing the dressings; this might always be avoided by previously applying tepid fomentations.

Under all the circumstances which have been mentioned, an occasional opiate is very beneficial; but no medicine of this kind should be left in the way of an ordinary nurse, who will often administer it to secure to herself a quiet night, to the great injury of the child: even Dalby's carminative, or syrup of poppies, should never be left in the nursery. I have known many children destroyed by their constant exhibition. The American soothing syrup is another remedy that is perhaps too frequently ordered by medical men: it is supposed to soften the gums, and to render the process of teething easier; which it does, not by mollifying the gums, but by virtue of a narcotic principle which it contains.

A child, when teething, carries every thing to its mouth, bites it, and thereby seems to experience relief, and nothing will be found to please it more than the nurse rubbing the gums with her finger. A gum-stick promotes the flow of saliva, and amuses the infant.

## CHAP. II.

DIFFICULT DEGLUTITION FROM INFLAMMATION, ULCERATION, OR ENLARGEMENT OF THE TONGUE; CYNANCHE TONSILLARIS; CYNANCHE PHARYNGEA; INFLAMMATION OR ULCERATION OF THE ŒSOPHAGUS.

---

DIFFICULT deglutition may be produced by inflammation, ulceration, or enlargement of the tongue; which are often caused by the action of mercury and other metallic poisons. If the affection be produced by mercury, leeches applied to the cheeks are said to be very useful, as also a wash composed of a solution of the chlorate of soda, or that of lime. Several serious cases of inflammation of the tongue have lately been published. Two will be found in the 92d and 93d Nos. of the Edinburgh Journal, and a fatal one in the 214th No. of the Lancet. If I can trust my own observations, I am inclined to believe that inflammation and enlargement of the tongue are generally owing to some temporary diseased action in the chylo-poietic viscera. I may appeal to the experience of any professional man, who is liable to derangements of the stomach and bowels, whether he has not, on such occasions, felt his tongue sometimes swollen and painful, and even slightly ulcerated in different parts of the tip and edges; and whether he has not been led to attribute such a condition to the state of his digestive organs. Whether this view be correct to the full extent or not, the stomach and bowels must be attended to in the treatment.

Children in particular are very liable to white specks, vesicles, or ulcerations on the tongue, and over all the mucous membrane of the mouth and fauces. These specks are called aphthæ; we meet with this affection in two forms, one of which is mild, the other very severe. In the first, the treatment consists in keeping the bowels gently open, avoiding solid food, and using the warm bath. In the last, I feel persuaded, from the vomiting and purging, and the intensity of the other symptoms, that the disease affects considerable portions of the intestinal tube, and requires a different plan. Before the appearance of the ulcerations in the mouth, the constitutional symptoms occasionally run high, which are sometimes relieved upon the mouth becoming sore; so that this affection has some resemblance to the exanthemata. Mr. Burns, in describing this disease, states, that "the child is sometimes drowsy, and oppressed for some hours, or even a day or two, before the spots appear, and occasionally is affected with spasms. The fever and oppression are often mitigated on the appearance of the aphthæ." Children affected in this manner, suffer great pain, and are consequently exceedingly peevish. The stools are generally acrid, sour, and dis-



coloured; there are often tencismus, and prolapsus ani, and the surface around the anus is excoriated. Successive crops of aphthæ appear, which resemble small portions of curdled milk adhering to different parts of the tongue and mouth; after a time they become yellow, and seem to slough off, but may be renewed many times. When they drop off, the parts below frequently look raw, particularly in severe cases, in which the crust sometimes becomes dry and hard; occasionally the parts look very foul, dark-coloured, and have a fetid smell. A case of an adult lately fell under my observation, in which great suffering was produced; the sloughs were most extensive, and portions even of the palate itself were thrown off.

The diseased action frequently extends into the air passages, announced by dyspnœa and cough. Children brought up by the spoon, are more liable to aphthous affections than others, as well as those whose bowels are neglected, or are insufficiently clothed.

*Treatment.*—This pathological description of the disease, leads at once to the proper mode of practice. In the two cases of inflammation of the tongue recorded in the Edinburgh Medical and Surgical Journal, V. S. and the application of leeches, produced temporary benefit only, while deep scarifications were had recourse to with permanent advantage. It is probable, however, that sufficient attention has not been always paid to the condition of the stomach and bowels.

With respect to the severe cases of aphthous affections of the tongue and mouth, I can speak strongly of the advantages derived from the frequent application of leeches to the abdomen, if the strength be good; the warm bath, and counter-irritation on the abdomen by means of a stimulating embrocation, or the tartar-emetic ointment. The contents of the bowels should be discharged by an occasional dose of castor oil. An injection, composed of a few drops of laudanum, and a table spoonful of starch or gruel, may be thrown into the rectum, by means of a small penis syringe, but it is difficult at all times to make a child retain it. Dover's powder, united with aromatic powder, is also a good remedy.

If a child upon the breast be affected in this manner, no other food should be allowed; if it be already weaned, ass' milk ought to be provided; but if it can not be procured, whey mixed with a little cream, and occasionally a little thin gruel, may be substituted; beef tea, and soups of all kinds, are, according to my own experience, bad, until the disease be far upon the decline; if the child's strength be sinking, wine, properly diluted, is far less exceptionable than soups or animal jellies. A weak solution of the chlorate of soda, combined with an opiate, will be found serviceable, a tea spoonful for a dose. Considerable mischief is sometimes done, and children are very much and unnecessarily fretted, by the application of borax and sugar introduced into the mouth upon a cloth, or a finger, and rubbed so as to remove the crusts.

### CYNANCHE TONSILLARIS.

THERE are two varieties of this affection, the acute and chronic. In the acute, the swallowing is difficult and painful; the voice is altered, and in very severe

cases the respiration is impeded; the pain, generally speaking, is severe. On looking into the throat, the tonsils, uvula, and even part of the palate, are seen much swollen, and very vascular, and sometimes the throat is swollen externally. Loss of appetite, thirst, head-ache, and general fever, for the most part, accompany this disease; occasionally these symptoms run high, and there is delirium. In some cases only one tonsil is inflamed; in others, the uvula only; sometimes white specks are seen upon the inflamed part, surrounded by a viscid exudation, which present the appearance of ulcerations. The white specks alluded to, are sometimes produced by exudations of lymph, at others, by sebaceous matter making its escape from the mucous follicles. It has often been in my power to prove, that the sebaceous matter is one cause of a "bad breath." This form of sore throat bears a considerable resemblance to the cutaneous affection termed acne. Occasionally, however, ulcerations are observed in the throat.

Cynanche tonsillaris terminates in resolution; sometimes in suppuration, ulceration, and sloughing. When matter forms, the patient's sufferings are generally increased, the dyspnœa is considerable, and he is said in common language to have a quinsy.

The most frequent cause of this complaint is supposed to be cold, produced by sudden vicissitudes of weather; but I imagine there is a combination of causes in the production of inflammation of the throat, and that the principal are a disordered state of the stomach and bowels, and the formation of the sebaceous matter above alluded to. Many individuals are known to me, who never have a sore throat, unless the stomach and bowels have been for some time out of order; as well as others, who for a series of years have escaped an attack, by regulating themselves properly in this respect.

*Treatment.*—This complaint is sometimes very little under the power of the usual remedies, unless it be attacked at the very beginning; and it is only in such cases, or to check the inflammation from running into extensive ulceration or sloughing, that V. S. ought to be had recourse to. Leeches may be applied externally, under similar restrictions. It has been recommended, that they should be applied internally to the part immediately affected; in which last case, each leech is introduced by means of a tube, with a thread through the tail; but when it is thought necessary to draw blood from the part more immediately affected, it is much more easily and speedily done by scarifications, and much less painful to the patient. Blisters are very frequently useful. Females have a great objection both to leeches and blisters; but particularly to the former, from the marks they produce. Laxative medicines are highly necessary, and must be frequently repeated. Emetics are much extolled. The best gargle, if it be necessary to wash the throat, is a little warm water, or acidulated infusion of roses. Inhaling the vapour of hot water is productive of great benefit, whether suppuration is to take place or not. When matter forms, dyspnœa frequently becomes a marked symptom, therefore the sooner it is discharged the better for the patient; and it is by no means a painful operation, the relief being often in-

stantaneous. Several fatal cases have come to my knowledge, although I have not seen one myself; it is strongly suspected, however, that the immediate cause of death has been inflammation extending into the larynx and bronchial tubes.

*Chronic cynanche tonsillaris* may be either the consequence of acute inflammation terminating in the chronic state, or may take place as the effect of sub-acute inflammatory action; the uvula is found enlarged and hard, as are the tonsils. If the case be recent, stimulating applications are found useful, and a succession of blisters to the throat; if these means do not succeed, and the enlargement is permanent, particularly if the voice be affected, the patient becomes an object of surgical treatment.

Sometimes extensive and troublesome ulcerations are produced, as the effects of chronic, as well as of acute inflammation in the throat; and in treating these, it is necessary in the first place to attend to the general health, by regulating the state of the stomach and bowels, and also the diet, which ought to consist of mild and digestible substances. Leeches and blisters are often serviceable; but the most efficacious application, is a solution of the nitrate of silver in distilled water, in the proportion of four, six, and even ten grains to the ounce. The ulcerated surface is to be carefully washed, before the solution is applied. This operation, however insignificant it may appear, must be done with proper care, as bad consequences have been known to follow. There is a preparation in my museum, in which the epiglottis is completely destroyed by common caustic, rudely used.

## INFLAMMATION OF THE PHARYNX.

IN this affection the tonsils and uvula are not invariably inflamed, but upon looking, the parts being exposed to a bright light, we can often see the throat and pharynx very vascular, and loaded with viscid lymph, which the patient is constantly making efforts to dislodge by hawking and spitting.

The pain on swallowing is fully greater than in the last described affection, I have seen patients suffering severely, some apparently in great danger. When it is severe, the lancet must be used, followed or not by the application of leeches and blisters, according to circumstances. The inhalation of the vapour of hot water affords remarkable mitigation of the symptoms, and in slight cases, nothing further is required but to keep the bowels open, and allowing moderate nourishment.

## INFLAMMATION AND ULCERATION OF THE OESOPHAGUS.

OF all the structures in the human body, the oesophagus is perhaps the least liable to disease. In general it is difficult to detect inflammation of the oesophagus till ulceration and constriction take place. I have seen only one case of universal inflammation of this tube not caused by poison, in which the lining membrane was in a sloughing state. There is a preparation in my museum that displays similar appearances; in this case, however, there were no symptoms



indicative of disease in the tube. In the former case which I attended, there was pain and difficulty in swallowing. Both patients were also affected with phthisis. Inflammation may be partial, affecting only a part of the calibre of the œsophagus; and if ulceration follow, there will be no contraction, but the patient will feel slight pain and a momentary stoppage when the bolus of food arrives at the spot. If the whole calibre of the œsophagus be involved in the inflammation, the pain will be more considerable, not so much from constriction as from the effort to vomit, which is produced by irritation. If it terminates in ulceration, occupying the whole tube, constriction will take place with increased difficulty in swallowing. Patients have been known to be three and four days, and even a week, without food.

*Treatment.*—Attention to the bowels, topical bleeding, and extensive counter-irritation, are the best means which can be employed. Nourishing injections thrown into the rectum, are to be assiduously administered when the patient is unable to swallow a sufficient quantity of food. It is the practice in such cases to introduce instruments into the œsophagus, to produce dilatation; but I have seen it very injurious in several instances, when the operation was performed during the inflammatory stage. Affecting the system with mercury has been highly extolled, but perhaps without sufficient consideration. If the constriction be permanent, after the inflammation and irritation are subdued, a surgeon may be called to make cautious trials with a bougie; perhaps an œsophagus tube will be found the best instrument for this purpose.

## CHRONIC AFFECTIONS OF THE ŒSOPHAGUS.

SOMETIMES the gullet is diminished in diameter by fleshy excrescences, tumours, or occasionally scirrhus contractions are observed; and more rarely ossification. Some individuals have survived contractions of the œsophagus for a great many years, being obliged to have food introduced into the stomach through a tube. Chronic diseases of the œsophagus are frequently found to have made considerable progress before their existence is even suspected.

The smoke of tobacco and stramonium, the abuse of mercury, and drinking fluids either excessively hot or cold, have been assigned by writers as the general causes, but perhaps too hastily.

Of all the remedies which have been recommended to us in such cases, the bougie is undoubtedly the best; and if at any time there should be much pain, leeching, counter-irritation, and narcotics, are to be had recourse to.

Many other circumstances produce difficulty in swallowing, as for instance, want of the uvula, tumour in the pharynx, ulcerations in the larynx, or upon the epiglottis. The first two belong more to the surgical department than the medical, and therefore cannot be treated of in this work; the last two shall be noticed among the diseases of respiratory organs.

## CHAP. III.

### INDIGESTION.

---

UNDER this head I shall treat of the affection which is commonly called dyspepsia, with its usual attendants, flatulency, tympanitis, heartburn, and pyrosis; and also of the painful affection termed gastrodynia.

Dyspepsia is a most troublesome disease to treat; and I believe the physician, to be able to do so effectually, should have suffered from it himself, as one who has had the good fortune never to feel as if he had a stomach, can scarcely believe, or almost listen to, the complaints of those who have experienced that sensation. One symptom is more prominent and urgent in one case than another; a little flatus in the stomach occasionally produces violent nervous symptoms, sometimes as if the brain were seriously affected; and the whole will vanish after one or two sour eructations. Some patients appear as if they could not survive the difficulty of breathing under which they labour; and it will be found to depend, perhaps, on flatus rising in the œsophagus, producing the affection called *globus hystericus*. Remedies have not the same effect in any two cases; all plans of treatment will most generally fail, unless the patient himself can discover what articles of food agree with him better than others, and has resolution enough to adhere to a proper regimen. Dyspepsia may arise from various causes: *first*, from simple functional derangement of the stomach, duodenum, liver, spleen, or pancreas; *secondly*, from indigestible and acrid substances taken into the stomach; *thirdly*, from structural derangements in the digestive apparatus; *fourthly*, from long continued constipation; *fifthly*, from derangements in other important organs.

Dr. Wilson Philip, who has written an excellent work upon this subject, has divided the disease into three stages. This plan would do admirably well, if dyspepsia were as regular in its march as intermittent fever; but in practice, such an arbitrary arrangement will not be found useful, because the second, or even the third stage, may be produced at once, without advancing regularly through the others.

*First stage of indigestion.*—The first symptoms of indigestion are a sense of fulness and uneasiness in the region of the stomach, arising either from too great a load of food, from some indigestible article, or from flatulent distension of the stomach; frequent acid eructations, constipation, loaded tongue, and some thirst,

follow. Sometimes sore throat is complained of; it is difficult to keep the hands and feet in a sufficient degree of heat; and occasionally there is severe headache.

These symptoms may steal on slowly, and from being felt only occasionally, are neglected; or they may be produced suddenly, by indulgence in a copious draught of very cold water, or from anxiety, grief, fright, or other severe mental affections, or by too violent exercise after a full meal.

Physicians are rarely consulted in the first stage of the complaint; for the patient either drives on through it, or relieves himself by a day or two's abstinence, and by taking a laxative. If a person, however, take little heed of himself, he is soon heard to complain of restless nights, oppression at the præcordia, and becomes sensible of diminution of strength, and heat of skin; his appetite becomes fastidious; he is either very costive, or is affected with diarrhœa. The alvine discharge is sometimes very bilious; at others white, shewing a want of bile; it is sticky, drops with difficulty from the body, and is very fetid. After the patient obtains passage from the bowels, he still feels much loaded, and very often considerable quantities of half-digested food will be observed in the stools.

Persons labouring under such symptoms, will very generally be heard to attribute their complaint to a "*fit of the bile*"; and many medical men, I fear, confound stomach disorders with those of the liver, and too frequently exhibit powerful mercurial preparations, to the great injury of the patient.

*Treatment of the first stage.*—The cure of this form of the complaint is not difficult. The patient is to be directed to abstain from the use of soups, and whatever else distends the stomach; to eat little, and to leave off while he has still an appetite; to keep his bowels open with a little rhubarb, Henry's calcined magnesia, or a compound colocynth pill; and to take regular exercise. He should, as much as possible, avoid any cause which has a tendency to produce mental excitement or depression.

*The second stage of dyspepsia* is marked, according to Dr. Wilson Philip, by the supervention of tenderness in the epigastric region, and a hard pulse; and he very justly considers these two symptoms of much practical importance. The patient now feels very sensible to the impression of cold; he is often chilly, and afterwards complains of flushes of heat; his hands and feet have sometimes a dry, burning sensation, particularly during the first part of the night, extremely cold at other periods, painfully so when he first goes to bed; his skin becomes hot in bad cases, towards morning a perspiration breaks out, and the patient enjoys some quiet sleep. When he awakes, although he may complain of not feeling refreshed, yet the symptoms are greatly relieved. His debility is now greater, with some emaciation; he complains of languor, and always desponds. There is considerable uneasiness and fulness in the epigastric region, and an occasional darting pain towards the spine, together with a burning sensation in the stomach. Palpitations are now, perhaps, very troublesome; they are not constant, however, but become worse after dinner; the least thing agitates the mind, and produces them. The patient sometimes coughs and expectorates in the morning, and supposes he is consumptive; or there is vertigo and headache,



with imperfect vision, as, for instance, seeing two objects instead of one, or only half an object, and it is impossible to persuade him that he is not threatened with apoplexy.

In cases of dyspepsia, some individuals, particularly those with light hair, are very liable to inflammation of the tarsi, with purulent exudation; and sometimes little abscesses form, which are called in common language "styes." The kidneys frequently suffer, the flow of urine being either too sparing or too copious, attended with complaints which are called "gravelish." It is my belief that dyspeptics are more liable than others to inveterate skin diseases, and to stone in the bladder. It will be found also that most of the individuals who labour under hæmorrhoidal affections are dyspeptics; and it may be mentioned, that I have rarely seen a person afflicted with fistula in ano, excepting when it proceeded from external injury, who has not been a martyr for a long period to this class of complaints. Pure surgeons should make themselves acquainted with these facts, and a great many other points of medical pathology.

It is rare to see all these complications, but they are occasionally met with in the same patient. I have seen many patients consider their lives as burdens to themselves, and there is often a strong tendency to commit suicide.

Should the symptoms continue severe for a considerable time, some serious organic lesion may be dreaded; but the lungs, liver, and brain, are the organs which most frequently suffer, and form what may be termed the third stage of dyspepsia.

*Treatment of the second stage.*—Whenever the patient complains of tenderness in the epigastric region, with a hard pulse and bad nights, local bleeding by cupping or leeching frequently produces the best effects. My own plan, in severe cases, is to apply leeches, to the number of twelve or eighteen, two or three times if necessary, before counter-irritation is had recourse to; and the best method of producing irritation, is by frictions with the tartrate of antimony ointment, which must be persevered in, first on one part, then on another, so as to produce a succession of pustules. I have been led to place much dependence on this practice, by observing that dyspeptics have sometimes been relieved, at others cured, upon the appearance of a spontaneous eruption. In severe cases, the diet should consist of gruel, arrow root, milk, calf-foot jelly, light pudding, and good bread; and these should be allowed in limited quantity; more than a breakfast tea-cupful at a time will overload the stomach. Soups and vegetables should be avoided, at least for some time. Gentle laxatives, so as to open the bowels twice a-day, are to be used. The tepid bath will be found very useful; but perspiration must not be encouraged after coming out of the bath. The patient should be clad according to the season of the year; and it is of great consequence to keep the feet comfortably warm and dry; in order to ensure this, worsted stockings are too frequently directed to be worn, which, in many individuals, will produce the very circumstance it is wished to avoid. It was a long time before I could discover the cause of this; and I believe I may now state confidently, that worsted stockings, worn by people whose feet

perspire, will tend to produce coldness of the extremities ; under such circumstances, I find the object is attained, if the patient wear an under stocking either of silk or thin cotton. Exercise in the open air is highly necessary as soon as the patient's strength will permit ; if he ride on horseback, the feet should be additionally protected in cold weather by mud or cloth boots, and he should never make use of horse exercise for two or three hours after a meal. By degrees, he may be allowed a small tea-cup full of chicken or beef tea ; subsequently, he may eat part of the breast of a chicken or game to dinner, till he is able to return to ordinary fare. The physician, in severe cases, ought to insist on his patient keeping notes of his diet, particularly during his recovery, which will enable him to compare his present state of health with the articles he had eaten the day before. The best diluents he can use are, an infusion of camomile flowers and lemon-peel, and wine and water ; stimulants are to be commenced with great caution, and not until the pain in the epigastric region and heat of skin are subdued ; perhaps the best stimulant is cayenne pepper with food, which affects the whole bowels as well as the stomach, and tends to obviate constipation. Ginger tea will be found serviceable, together with a glass or two of good sound wine once or twice a-day. Wine sometimes, however, produces acidity, in which case a small quantity of brandy in water is found an agreeable substitute.

Dyspepsia is one of those diseases too generally treated by the routine practitioner, from its name, without reference to the pathological condition of the body on which the numerous symptoms depend. If such a person were asked, what he would prescribe for a person who had dyspepsia ? he would quickly reply, tonics ! I have no objection to the medicines which are usually administered under the denomination of tonics, provided they are not given for the purpose of running up a bill, or prescribed at times when something better might be done for the patient. But I have some doubts respecting the truth of the received notion of their action, I do not think it is by giving tone to the stomach. These remedies are bitter, and, I imagine, produce increased secretion of the fluids connected with the digestive process. On putting a little quassia or gentian into the mouth, immediately a flow of saliva takes place, which continues as long as the taste is perceptible, and even afterwards, when the person thinks of the bitter taste. May not a similar action in other organs, follow the application of the same substance ?

If the liver be not doing its duty properly, calomel or the blue pill may be exhibited at bed-time, followed by a very small dose of salts in the morning ; but it is a despicable practice to give blue pill in every disease connected with the digestive function. And it is much to be regretted, that the great name of Abernethy should ever have been associated with such insufferable quackery.

The above treatment is to be persevered in for a long time, changing the diet and the laxatives now and then, but continuing the counter-irritation and application of leeches alternately. After a time, cold bathing in the open sea may be cautiously tried ; the shower bath, or sponging the body with vinegar and water, often produces the best effects.

It would be needless to dwell here upon the treatment necessary in the third stage of indigestion, when some organic lesion is supposed to exist. This must vary according to the organ diseased, as well as the nature and extent of the affection.

The disease termed dyspeptic phthisis by Dr. Wilson Philip, is only met with, generally speaking, in cases of long standing. My experience, however, leads me to state that bronchitis is the primary affection in such cases, the tubercles form subsequently.

*Flatulency and tympanitis.*—These are symptoms of dyspepsia, but require a few separate remarks along with heartburn and water-brash.

Some people suffer extremely from flatulency and acid eructations. Five or six instances have fallen within my observation, of individuals who frequently passed enormous quantities of flatus upwards; and it is presumed these are cases to which Dr. Mason Good would apply the term *cholera flatulenta*. In all such instances, the patient had previously eaten some crude vegetable substance: generally, the ordinary salad mixture, or radishes. The remedies which seemed to afford the greatest relief were æther, aromatic spirit of hartshorn, warm brandy and water, or brandy by itself, and essence of peppermint.

Tympanitis may be detected by percussing the abdomen; it is often a troublesome symptom, not only in this affection, but in fever; and the best remedy which can be used is turpentine. It is better to try it, in the first place, by injection, in the proportion of a table spoonful to eight or ten ounces of thin gruel, which the patient is to retain as long as possible. If this plan do not succeed, half an ounce is to be given by the mouth, with the same quantity of castor oil.

Infants, during the first months, frequently suffer very much from flatus in the stomach and bowels, which will in general be found to depend, either on the pernicious and unnecessary custom of giving them castor oil and other medicines to open their bowels, or food they are unable to digest. In truth, the moment an infant is born, and often before it is dressed, castor oil is exhibited, which frequently produces griping; this is attributed to wind, and want of something to eat, therefore a quantity of gruel is given, which often increases the child's sufferings; Dalby's carminative is then given, which affords temporary relief. Few infants can be expected to thrive well under such management. The usual remedies for flatulence in infancy are, dill water and oil of aniseed.

*Pyrosis, or water-brash.*—In some long standing cases of indigestion, particularly in old people, in women more than men, and those who live principally upon farinaceous food, a considerable quantity of limpid fluid is discharged from the stomach by eructation. This is the affection which is called water-brash. It is a symptom of scirrhus of the stomach also.

It attacks the patient generally in the morning and forenoon: at first considerable complaint is made of pain in the pit of the stomach, faintness, a sense of tightness, as if the stomach were closely drawn up to the back bone, and the uneasiness is increased upon moving into the erect posture; at last the limpid fluid is discharged in considerable quantity at different times, when the pain sub-



sides ; sometimes the fluid has an acid taste, but in general it is stated to be insipid. Occasionally the discharge takes place without being preceded by any severe symptom.

*Heartburn* is, next to flatulency, one of the most frequent symptoms in indigestion, and it is also one of the common attendants on pregnancy. When heartburn exists, the patient complains of a burning pain in the pit of the stomach ; every kind of food creates acidity ; and hot, acrid eructations take place, which seem to irritate the œsophagus. Some women suffer very much from this symptom during the whole course of pregnancy, but the moment delivery takes place, it generally vanishes like magic.

Henry's calcined magnesia, and careful attention to the diet, often mitigate this symptom. The super-carbonate of soda and potass are frequently used, and sometimes with benefit ; as also, charcoal and chalk mixture. The remedy which I have found most successful in producing temporary relief, is the common extract of liquorice. Cases are now and then met with, which resist all these remedies, together with leeches and opiates. The oxide of bismuth, sulphate of iron, and sulphate of zinc, have been highly extolled. I have exhibited them often in such instances, but without benefit. The points to be chiefly attended to, are the regimen and laxatives.

## GASTRODYNIA.

THE stomach is liable to a neuralgic affection, which is known by this name, as well as by the term *cardialgia*. *Gastrodynia* is closely connected with *dyspepsia*, often occurring as a symptom ; but it may exist as the primary disease ; sooner or later, however, the digestive powers suffer.

*Symptoms*.—Sometimes the appetite remains good ; but in general it is impaired. There is a gnawing pain in the stomach, extending very deep to the back, accompanied by anxiety, sense of constriction, tendency to eructate or to vomit, with occasional faintness, sometimes headache and constipation, and the patient is occasionally relieved by eructation ; a considerable quantity of limpid fluid is sometimes discharged ; in fact, this affection is often complicated with *pyrosis*. After a severe attack, a patient sometimes escapes without another, for a week, month, or even a longer period.

All the symptoms enumerated do not take place in every case ; sometimes there being only pain and anxiety, with some nausea, which are increased after taking food. This affection is almost unknown before the age of puberty. Besides, depending on a diseased condition of the nerves of the stomach, it is probably occasioned by a diseased state of the pancreas, spleen, and liver. Sometimes it is produced by scirrhus of the stomach and duodenum, and it is also a very troublesome attendant on gout. This disease has of late years excited a great deal of interest in France, as well as in this country ; and although no additional light has been thrown upon the nature and seat of the disease, still very considerable practical advantages cannot fail to be derived from perusing the writings of M. Barras, and Dr. James Johnson.

The chief causes of gastrodynia, generally speaking, are supposed to be, long-continued use of indigestible food, very hot or very cold drinks, dram-drinking, long fasting, worms. The chief articles which produce a paroxysm in an individual liable to the affection, are salads, and all other crude, uncooked vegetable substances, sweet-meats, new bread, cherries, nuts, olives, and above all perhaps, roasted chesnuts. The cure depends, therefore, upon avoiding such articles in future, together with fat, oils, and butter.

During an attack, a vomit will often suddenly check it, if exhibited within two or three hours after the offending matter has been eaten; hot flannels are to be applied to the epigastric region; gentle laxatives, and the warm bath, are to be employed, together with bitters, alkalies, magnesia; and in bad cases counter-irritation is to be persevered in for a considerable time. I have known one or two patients, who for many months at a time could not put any kind of food into the stomach, without previously taking a small dose of the sedative solution of opium; and we are told by Roche and Sanson, that in the worst form of this disease, which had resisted bleeding, bitters, and antispasmodics, Dr. François found lactucarium successful. It is a curious fact, that although sweet things generally aggravate the complaint, the extract of liquorice frequently alleviates the pain considerably. M. Barras insists much upon the necessity of making the patient take animal food, although it may for the time increase his sufferings.

## CHAP. IV.

### DISCHARGE OF BLOOD FROM THE STOMACH AND BOWELS.

---

I. *Hæmorrhage from the Stomach.*—This form, which is termed Hæmatemesis, is sometimes occasioned by diseases of the liver and spleen, and takes place also occasionally in fevers; but these are not under consideration at present.

Hæmatemesis most frequently attacks women, particularly those who are unmarried, of a plethoric habit, and at times when there is an obstruction, or some other irregularity of the menstrual discharge, and who are constipated. Each attack is generally preceded by a rigor. Pure blood is seldom vomitted, unless from external violence, or the erosion of the coats of a blood vessel. This discharge rarely coagulates, and seems rather to be the product of passive hæmorrhage, or exudation from the minute vessels of the mucous membrane. It is supposed to be a very easy matter to distinguish this affection from those hæmorrhages which take place from the lungs. In hæmatemesis it is said the discharge is preceded by a sense of weight, pain in the region of the stomach, and that it is unaccompanied by cough, &c. But these distinctions will not answer in practice, and it may be of great consequence to a medical man, that he should not give an assurance of safety, in a case which may prove fatal in a few minutes, as the following instances will shew.—A child was attended by Dr. Yates, when that excellent gentleman was a pupil at my Dispensary. It had been for some time complaining of cough and anomalous symptoms, which were relieved from time to time, and it was able at last to go to school as usual. Still it occasionally discharged a little blood, and died suddenly, after *vomiting* a considerable quantity. On dissection, the stomach was found filled with a coagulum, and there was also a considerable portion in the small intestines in a fluid state. It was evident that there had been active hæmorrhage, but after the most minute investigation, no blood-vessel could be found from which it had issued. The relations began to complain of the time we had been over the body, and at length became very impatient, so much so, that we were obliged to give up further examination; but the whole of the contents of the thorax, including the œsophagus and great vessels, having



been carefully dissected out, were surreptitiously conveyed to my museum for minute inspection; and it was discovered that the blood found in the stomach and bowels, had proceeded from a ruptured artery in a cavern in the superior lobe of the left lung. A fistulous opening was found running upwards from this cavern, and communicated high up with the œsophagus; so that when ulceration produced a rupture of the vessel, the blood passed in this direction, and found its way into the stomach. The preparation is in the museum, together with an accurate and beautiful drawing by my friend Dr. Alexander Thomson, an enthusiastic pathologist.

Another remarkable case occurred in the dispensary practice, in an old man. He had enjoyed remarkably good health until lately, when his appetite became impaired, and he complained of dyspeptic symptoms, which gradually increased in severity, and he was at last reluctantly obliged to seek for medical advice, at the age of 72, for the first time, I believe, in his life. He complained of so much uneasiness in the region of the stomach, that he was cupped several times, and counter-irritation was produced over the part affected, with considerable relief. One morning he discharged a little blood, between the act of coughing and vomiting, and he soon died after passing a considerable quantity. Upon dissection, it was a subject of general remark, that the external appearance of his body, as to shape and plumpness, was more like that of a man half his age. Every internal organ appeared sound; but on cutting through the stomach into the duodenum, the pylorus was found thickened and indurated, and an ulcer about the size of a horse-bean was discovered in the duodenum, on the surface of which the gaping mouth of a large artery was discovered, from which the hæmorrhage had taken place.

*Treatment.*—As the disease generally attacks plethoric individuals, and is seldom accompanied by debility or oppression, practitioners have no scruple in employing blood-letting during an attack, and it is frequently successful, by immediately checking the discharge. Quietness, cold acid drinks, and a course of laxative medicines, are also essentially necessary. If the hæmorrhage recur after bleeding, or should it take place in a constitution already debilitated, the acetate of lead, either in solution or in the form of pill, in doses of two grains every second or third hour, will be found serviceable.

II. *Hæmorrhage from the bowels.*—This was formerly known by the term *Hæmorrhoidal Flux*, and it was believed by the ancients to be salutary; but now such a discharge is always regarded with anxiety, as it frequently tends to undermine the constitution, and like other long continued hæmorrhages, leads to affections of the brain,—a remarkable and fatal instance of which lately fell under my observation.

When blood is discharged by stool, it will sometimes be found to proceed from an injury done to the verge of the anus by a hard and constipated stool, from a ruptured blood-vessel in the bowels, or from the diseased excrescences which are found at the termination of the rectum, known by the name of hæmorrhoids, vulgarly called piles. These have been divided into two kinds,

external and internal, which last are also called blind piles. They may be said to be painful excrescences on the verge of the anus, or in the rectum, usually attended with a discharge of mucus or of blood.

The profession is not agreed as to their pathology; but after a careful examination of the opinions which have prevailed, and of the diseased parts themselves, I feel disposed to believe there are at least four distinct kinds of hæmorrhoids. 1st, They are sometimes nothing more than a varicose state of the hæmorrhoidal veins, with, perhaps, a slight thickening of the mucous membrane of the rectum itself. 2dly, They are formed by an effusion of blood in the sub-mucous tissue, with a slight thickening of the membrane. 3dly, They are mere fugosities from the surface of the mucous membrane; and accordingly are found to vary very much in seize, shape, and appearance. 4thly, A prolapsed state of the mucous membrane of the rectum, which subsequently becomes indurated, and in a manner strangulated, by the contraction of the sphincter.

*Symptoms.*—Individuals who are thus afflicted, suffer only occasionally, and then it is said, in common language, they have “a fit of the piles.” A sense of fulness is felt in the rectum, attended with an occasional stinging pain, which is sometimes very severe and darting, increased when passing a stool, during which a quantity of blood is discharged. A strong desire is experienced to sit and strain, which is termed tenesmus. After this has subsided, a sense of heat is felt for a few minutes. But when the piles are external, they often swell enormously; are very tender, however small they may be, and sometimes ulcerated. In this case the discharge may be constant, taking place, however, in small quantity at a time; on other occasions there is copious hæmorrhage, followed by relief from pain. When the inflammation runs high, induration of greater or less extent is left, in consequence most probably, of effusion of lymph into the cellular membrane, to which may frequently be traced strictures in the rectum, and tubercular formations close to the verge of the anus.

*Causes.*—The injury done to the parts by the frequent passage of indurated feces; use of aloetic purges; long continued exercise in the erect posture; sitting on a cold or damp seat; and every circumstance which impedes the flow of blood through the veins of the abdomen,—are causes of this complaint. The pressure of the gravid uterus, therefore, is sometimes a cause, as well as tumors affecting different parts of the uterine system, and diseases of the liver, &c. But it will be almost always observed, that individuals, affected with piles, have been long and seriously afflicted with gastro-intestinal irritation.\*

*Treatment.*—The bowels must be kept constantly well regulated by the gentlest laxatives, carefully abstaining from the use of aloes in any shape. A large mucilaginous injection, exhibited immediately before going to stool, will be found highly serviceable, and the best way of preparing it is by making a decoction of linseed. Sulphur has been erroneously supposed to be a specific.

\* The pernicious habit of taking a book or newspaper to read in the water-closet, when at stool, is very frequently a cause of this unpleasant complaint.

Balsam of capaiva was recommended and used by Dr. Cullen, by introducing it into the rectum; but in the ordinary cases of blind piles, gentle laxatives, occasional injections of decoction of linseed, together with rest in the horizontal posture, and a moderately antiphlogistic regimen, will suffice. When the piles are external, tender, and inflamed, the application of leeches, or punctures made with a lancet, are also productive of great benefit, by diminishing the tension and pain. In severe cases the recumbent posture is actually necessary, and I have seen the inflammation run so high, and attended with so much suffering, as to require general bleeding. Poultices and warm fomentations are very serviceable in alleviating the pain, and sometimes anodyne injections must be had recourse to; considerable relief is obtained, if the excrescence can be pushed within the sphincter. An ointment, made by mixing equal parts of powder of galls and opium in hog's lard, and a weak solution of nitrate of silver, are frequently used with benefit.

If a great deal of blood be lost, whether at once or at different periods, a careful examination should be made with the eye, as well as the finger, in order to ascertain the exact point from which the bleeding proceeds, and it is necessary sometimes to apply caustic, the ligature, and even the knife; but these are matters of surgery. I would only further beg to insist upon the necessity of attending more than is generally done in these cases to the constitution, and particularly to the general condition of the mucous membranes; and young practitioners should bear in mind, that neglected cases of piles often terminate in fistula.



## CHAP. V.

COMMON COLIC; PAINTER'S COLIC; ILEUS, INTUS-SUSCEPTION; INTESTINAL CONCRETIONS; PROLAPSUS ANI; AND CONSTRICTION OF THE RECTUM

---

1.—COMMON COLIC may be produced by indigestible food, constipation, and a diseased condition of the biliary secretion.

*Symptoms.*—Gripping pains and flatulent distention of the bowels, with a sense of twisting in the region of the navel, are felt, sometimes with contraction of the abdominal muscles; and occasionally, though rarely, with some degree of nausea and vomiting, which takes place more frequently when the affection is produced by the biliary secretion, and in which case there is generally looseness of the bowels. Flatus is sometimes heard rumbling backwards and forwards in the bowels, which is more classically termed borborygmus. The pain comes on in paroxysms, during which the patient thinks he experiences relief by pressure applied to the abdomen, which in general distinguishes the affection from others of an inflammatory nature. But it must be recollected that cases of colic, when neglected, often terminate in inflammation of the bowels.

*Treatment.*—It is a most essential point to obtain free evacuations from the bowels speedily, particularly by means of an injection; certainly the best is composed of tobacco, in the proportion of half a drachm infused for ten or fifteen minutes in eight or ten ounces of boiling water; to be strained, and exhibited when sufficiently cool. If the attack succeed immediately after a meal, an emetic may be given to dislodge the offending matter. A considerable quantity of oil of cloves should be administered along with castor oil, or any other purgative; or oil of turpentine may be used by injection. Warm fomentations to the abdomen, or the general warm bath, may be employed.

Some cases of abdominal inflammation are attended by symptoms so slight as to resemble colic very closely, so much so, that in many instances it is difficult, and in some impossible, to determine this point of diagnosis.

In such circumstances, it will be well for our patients if we do not attempt to refine too nicely; if in doubt whether the case be one of inflammation or of colic, it is our duty to give the benefit of that doubt by using the lancet, particularly if the bowels are obstinate. The advantage of opium is very doubtful till the bowels have been properly moved and the evacuation examined.

In a case of colic from vitiated bile, diluents, such as barley water, are to be employed, together with a weak solution of salts, and afterwards opiates. If the

bowels be open, and we are perfectly satisfied that there is no danger of inflammation, a stimulant such as brandy, is often beneficial.

Some women, at the menstrual period, have griping pains in the bowels, more particularly in the course of the colon, accompanied by considerable distension of the abdomen, attended or not by constipation; frequently the pain extends from the caput cæcum to the arch of the colon. The best remedy in such cases, is a turpentine or assafœtida injection, combined with warm fomentations, proper regulation of the bowels and diet, and sometimes the warm hip-bath.

### PAINTER'S COLIC.

THIS is also known by the names, collica pictonum, Devonshire colic; and in the West Indies it is commonly called dry belly-ache.

This is the form of colic produced by the introduction of lead into the system, whether in food, by respiration, or cuticular absorption. It is a disease which was long known and described before its cause was discovered. The discovery was made in Germany about one hundred and thirty years ago, by detecting publicans putting a preparation of lead into their wines. It is said that the disease used to prevail in Devonshire, and other places where cider is manufactured, in consequence of putting lead into the casks, to render the cider sweeter. The disease also prevails in the neighborhood of smelting furnaces and lead mines; indeed it is even said, in such situations, to affect the lower animals, such as poultry, pigs, &c. House painters, plumbers, potters, glaziers, and all who are compelled by their occupation to handle lead much, are subject to this disease, particularly if they are not well guarded by personal cleanliness. Sir George Baker\* was the first who drew the attention of the profession in this country to this interesting subject. It must be mentioned, however, that cases do occur displaying the same phenomena, course, and termination, which have been produced by exposure to cold and damp, when there could not be the most remote suspicion of the action of lead upon the system.

*Symptoms.*—The pain never leaves its principal seat about the umbilicus and pit of the stomach; at first it is dull and remitting, but gradually increases to be very severe and constant. The pain, in some severe cases, strikes through the back, and patients have told me that it resembled a stab through the body, others have felt as if they were cut in two at the umbilicus. In other cases the pain extends to the arms and hands, down the back and pelvis often affecting the lower extremities. The integuments of the abdomen feel retracted and hard, and I have seen the strongest men rolling and weeping like children. The whole surface sometimes suffers from pains, which the patients ascribe to rheumatism; there is also constipation, sometimes tenesmus, and occasionally sickness and vomiting. The sickness and vomiting are most severe at the height of the paroxysm; acrid mucus is sometimes vomited, or bile mixed with mucus, affording temporary relief. Hiccup sometimes supervenes, together with retraction of the testicles.

\*Vide Papers in the 1st and 2d Vol. of the Lond. Coll. of Physic.

It is a matter which strikes every one with astonishment, that notwithstanding the violence of the symptoms, and the excruciating sufferings of the patient, the pulse is rarely much affected till the disease goes on for some time; in the end, however, it becomes quick and small. It has been remarked by some, that the feet and toes are occasionally affected, as in gout.

Spontaneous relief is said to follow a copious discharge of scybalous matter, like sheep's droppings mixed with mucus and considerable quantities of blood. Occasionally, it is said, sweating produces a crisis. Sometimes the disease produces palsy of the superior extremities, and occasionally it terminates in death, which is preceded by a loss of sight and hearing, delirium, and convulsions. One attack leads to another; that is to say, a predisposition is left.

Colica Pictonum is a most afflicting disease to treat; for, do what we will, the patient is seldom relieved under a week, even when well managed, and relapses often take place at times when he is apparently doing well. He may be pronounced to be in great danger, however, when there is delirium, violent spasms, and convulsions.

*Appearances on dissection.*—The following is an abstract of the appearances found on dissection, in the bodies of a number of individuals who died of this affection in the hospital of Beaujon, under the care of M. Renaudin. Redness, thickness, and ulceration of the mucous membrane of the alimentary canal, and often enlargement of the mesenteric glands, corresponding to the inflamed or ulcerated portions of this membrane. The redness varied from that of bright rose even to violet and brown; it was disposed in points, in streaks, and in patches, and sometimes occupied an extent of several feet. The thickness was variable. The ulcerations were found almost always toward the termination of the small intestines, near the valve of the colon, which was sometimes destroyed; and in cases where diarrhœa prevailed, ulcerations were found in the colon; and sometimes they were observed in the stomach. They were occasionally deep, and numerous; sometimes the stomach and intestines were perforated.\*

*Treatment.*—The nature and seat of this disease are imperfectly known; but there can be no doubt, from the symptoms during life, and the appearances found on dissection, that it is probably seated, in the first instance, in the nervous system, and that we have to dread inflammation of the mucous membrane of the stomach and bowels. I have often tried local bleeding by repeated cuppings and leechings on the abdomen and flanks; and I can speak confidently, from experience, of the good effect of this plan. I have always had an unaccountable dread of opening a vein in these cases, perhaps from prejudices of education; but since I have seen the above account of the appearances on dissection, my objections to it are so far removed, that I shall hereafter try it, on proper occasions, cautiously.

\* Vide Roche and Sanson, vol. i. p. 528. These authors inform us that M. Renaudin had two hundred and seventy-five cases during the years 1821-22-23.



The remedies of the first importance, are calomel and opium, given in pills containing four or five grains of each, repeated at short intervals, so as to affect the system as speedily as possible. This remedial means has been strongly recommended by my friend Dr. Musgrave, of the island of Antigua.

One of the most severe cases of colica pictonum that ever fell under my care, occurred since the publication of the first edition. The patient was an apothecary's shop-man, aged 32, previous health good, and habits regular. The attack appeared to be owing to bathing the feet several times in a solution of acetate of lead, to suppress a fetid perspiration. In this case the paroxysms of pain were very distressing; the abdomen hard and distended; the features sharp and anxious, with hiccup and vomiting. The pulse did not exceed 80 till after V. S. had been twice repeated, and large doses of calomel and opium administered, when it rose to 110. V. S. produced no relief; tobacco injections, fomentations, &c. were used in vain. The symptoms, however, became much mitigated after the third large dose of calomel and opium, conjoined with croton oil. He relapsed certainly, but was convalescent on the third day, and recovered progressively.

The bowels are extremely torpid in this disease, therefore common remedies must not be depended on; croton oil in doses of two, four, and six drops, must be given repeatedly at proper intervals, still continuing the calomel and opium. Turpentine is to be exhibited, both by the mouth and by injections. Large injections are to be administered; sometimes stimulating, at others unstimulating. Hot fomentations are to be applied; counter-irritation, when the disease is on the decline, which is to be for some time persevered in during the convalescence. The nitrate of silver has been strongly recommended in three, five, and six grain doses, in pill three times a-day.\* Dr. Percival gave fifteen grains of the sulphate of alum every fourth, fifth, or sixth hour; and he assures us the third dose seldom failed to alleviate the pain.†

It is proper to mention, that Dr. Reynolds has the credit of being the first who proved the powerful influence of opium over the morbid action produced in the system by lead.

---

## ILEUS.

THE attack comes on exactly like a common colic; afterwards vomiting takes place, which subsequently becomes incessant; sometimes even feculent matter is discharged by the mouth, and the abdomen is much distended. The symptoms vary much in intensity. Sometimes the pain is severe, amounting to tormina, at others it is slight. In some cases the febrile symptoms run high, in others there is no fever. In this, and even in common colic, the abdomen should be minutely examined with the hand, to ascertain whether or not a hernia exists; for I have seen two or three instances where much valuable time was lost, in consequence of mistaking a case of hernia for colic.

\* By Dr. Robert, 5th vol. Med. Trans.

† Vide 2d vol. Ed. Med. Essays.

*Appearances on dissection, and pathological remarks.*—Considerable dilatation of one part of the intestine is generally seen, while the continuous part is contracted; the parts above the contracted portion, are frequently distended with fluid and flatus. Sometimes the intestine is of a livid color, inflamed and even mortified. At other times there are marks of peritoneal inflammation; and on some occasions, gangrene, without peritonitis.

In treating of the nature and seat of this disease in the first edition, opinions similar to those of Dr. Abercrombie were advanced, viz. that the disease probably consists of “a paralysis of the muscular coat of a part of the intestinal tube, which leads to great dilatation; while the continuous portion of the bowel is contracted, which produces a temporary obstruction.” “But, (it was added,) there is much ambiguity on this subject.” Since that period I have thought frequently on the subject, and from an interesting conversation with Dr. William Stokes of Dublin, one of the most ardent and accurate pathologists in this country, I have become convinced that Dr. Abercrombie’s views are erroneous.

In fatal cases of ileus, the bowel has been generally found in two opposite conditions,—one part contracted like a cord, and another part above much dilated. The point to be determined is, which of these is the primary seat of affection. Dr. Abercrombie thinks it is the dilated portion, and that “*the doctrine of spasm, as applied to this subject, must be admitted to be entirely gratuitous; and we must proceed upon facts, not upon hypothesis, if we would endeavor to throw any light upon this important pathological question.*”\* In the last sentiment I most cordially agree; and as I think the author has substituted hypothesis for facts, I shall shortly state several reasons for dissent.

1st, Dr. A. avers, that “*the collapsed state of the intestine, in which it assumes the form of a cord, appears to be the natural state of healthy intestine.*” “*That in a case of ileus, the distended part is the real seat of the disease; and that the contracted part is not contracted by spasm, but is merely collapsed because it is empty, its muscular action being unimpaired,*” p. 136.

We submit, that the cord-like contraction is not the natural state of intestine. If it were the natural condition of parts, it would be always seen on dissection, when the bowels are unaffected by disease, whereas it is avowedly rare and according to our observations, is only seen when the intestinal tube is in a morbid state. This appears to be satisfactorily proved by Andral, Billard, and others. We have examined the bowels of animals, opened during life, and on no occasion found the tube in the state which is asserted by Dr. Abercrombie to be natural.

2dly, It appears to us that Dr. Abercrombie does not connect ileus with any known pathological state. He considers ileus to be a great and uniform distention of a part of the intestine, with loss of power of its muscular fibres. In short, he supposes the distended intestine to be in the state of paralysis, and that this is the primary disease. He states, also, that the “usual progress of the disease is into inflammation and its consequences,” p. 138.

\* Researches on the bowels, p. 134.

Dr. Abercrombie cautiously avoids the term "paralysis;" but it must be admitted, that loss of muscular power proceeds either from paralysis, or inflammation in the part. If paralysis, it is the opposite of the state of irritation, for innervation is abstracted, not added. If inflammation, then Dr. Abercrombie is wrong; but in neither case can he be correct.

It will be observed, also, that he does not denominate the cord-like state of the intestine, "contracted," which he ought, but "collapsed," which term he ought not to have employed, because it conveys any thing but a correct notion of the actual state of parts.

3dly, When we speak of a muscular organ such as the intestine, we must admit spasm to be possible, nay, probable; and we cannot therefore admit the doctrine of spasm, as applied to this subject, to be "*entirely gratuitous*." No one denies the muscularity of the intestines, and that they are capable of contraction, which implies an increase of innervation. If Dr. Abercrombie's idea were correct, the bladder should never fill, nor the heart, nor the feces pass through the intestine, unless muscular fibre could be *stimulated to dilate*. But it will be proper to allow Dr. Abercrombie to speak for himself. "If we suppose then that a considerable tract of the canal is in a *collapsed* state, and that a mass of alimentary matter is propelled into it by the contraction of the parts above, the series of actions which will take place, will probably be the following: When a portion which we shall call No. 1, is propelling its contents into a portion of No. 2, the force exerted must be such, as both to propel these contents, and also to overcome the *tonic contraction* of No. 2. The portion No. 2, then contracts in its turn, and propels the matter into No. 3; this into No. 4, and so on," p. 136.

It will be readily seen, on looking at the parts, that the empty intestine is not in a state of "tonic contraction," as Dr. A. asserts, and that it offers no resistance to the alimentary mass, which is propelled onward by the contraction of the superior portion of intestine.

4thly, If the dilated intestine usually passes into inflammation and gangrene, and its seat be in the muscular coat, its first stage must be one of irritation. The effect of irritation on muscular fibre is, to suddenly and powerfully contract it. The parts may become dilated afterwards, but the first effect will be contraction—and the contracted, of course, the diseased portion. It follows then, as a necessary consequence, that *if it be spasm*, the contracted is the diseased portion; or if, according to Dr. Abercrombie, it be disease of the muscular fibre, still in the first instance the same will occur.

Ileus, according to Dr. Abercrombie, is either a paralysis, or an irritation of the muscular fibres of the intestine, usually terminating in inflammation and gangrene. Could any two things be more opposite? If it be a paralysis, it is either general or local. It is not general, because all the symptoms are those of violently increased action, colic, vomiting, spasms of the abdominal muscles. and paroxysms of tormina! Tormina and loss of power together? If it be local, it is at all events accompanied by increased muscular action—spasm.



If the primary diseased action be connected with irritation, as we imagine, the first effect will be to contract the parts.

Lastly, It may be asked, does the treatment coincide with the doctrine of paralysis, or that of irritation and spasm? After describing the treatment, I shall return to consider this important question.

*Treatment.*—The chief attention must be directed to prevent and subdue inflammation, and to employ every means to move the bowels. For this purpose the milder laxatives, frequently repeated, assisted by tobacco injections, are to be had recourse to. If these fail, then we may entertain the question of bleeding, particularly if the case be not far advanced, and if there be pain on pressure. Leeches may be applied; but still we must not lose a moment in endeavoring to procure a stool. Although we may mitigate the symptoms by bleeding and leeching, yet we may rest assured that relapse will take place in the course of an hour or two, unless the bowels are opened. Dashing cold water upon the belly has sometimes succeeded. When the gut is supposed to be obstructed, mercury in its pure metallic state has been recommended to be poured into the stomach in considerable quantity, in order to force a passage. Once I was present at a dissection, when the obstruction existed at about six inches from the termination of the rectum; and since then I have met with two cases of ileus, which were produced by constriction of long standing of the rectum; therefore, I think, in all severe cases of this sort, that a long œsophagus tube should be introduced into the rectum, and if possible, pushed forward into the sigmoid flexure of the colon.

This is one of those diseases in which we frequently succeed in procuring passage from the bowels after bleeding, which had previously resisted the strongest purgatives; it is also one in which large opiates may be advantageously combined with laxatives. Opium generally acts by confining the bowels; but in the case now before us, it seems to increase rather than diminish the laxative effect of medicines. During recovery it may be advisable to apply counter-irritation.

It has been already asked, if the most improved remedial means coincide with Dr. Abercrombie's hypothesis? Bleeding, tobacco enemata, full doses of opium, and counter-irritants, to cure a disease which is a simple loss of the muscular power of a portion of the intestinal canal? The circumstances cannot be reconciled upon principles of pathology; neither will they bear the test of common sense. Had it not been for the deservedly high reputation of the author, I would not have condescended to refute such an hypothesis. Much real injury is done to the advancement of medical science, by the construction of such distorted theories; and I cannot resist quoting a passage from the preface of Dr. Abercrombie's work on the bowels, which bears on the present question. Speaking of the circumstances which have retarded the progress of medicine, he says there are two errors committed—the one is the "*construction of hypothetical theories, or the assumption of principles which are altogether*

*gratuitous and imaginary; the other is the deduction of general principles or conclusions from a limited number of facts."* P. 8.

## INTUS-SUSCEPTION.

INTUS-SUSCEPTION, generally speaking is a disease of infancy. There are the same symptoms as described in ileus, only that in many cases there is violent straining; the patient passing more or less bloody mucus with each effort, in some instances exactly resembling red currant jelly. This, like all other affections, varies very much in the symptoms as to violence; this was well proved in two fatal cases occurring in the same family, which fell under my immediate notice. They were both male infants at the breast; the disease ran its course in three days; but the symptoms were very violent in one case, and very slight in the other. In both, a tumor was felt in the left iliac region, at the termination of thirty-six hours, which gradually increased in size, till it became as large as an orange. Both children strained much at stool, and passed mucus tinged with blood. The disease has been known to terminate fatally in thirty hours.

*Appearances on dissection.*—We often find partial invaginations of the small intestines. I scarcely ever open a child without finding them; but they are not to be regarded as intus-susceptions, unless the coats are thickened, with marks of inflammation. At least so I thought when the first edition was written. Since then, however, I have become doubtful on this point, having discovered ulcerations in the intestines at each intus-suscepted part in every case which I have had an opportunity of examining. In the dissection of patients who die of intus-susception, it is the caput cæcum, and a portion of the ileum, which are commonly forced up by the ascending colon across the transverse colon, and sometimes down to the sigmoid flexure. In one of the cases to which I have alluded, the caput cæcum was found in the rectum, very near to the extremity of that gut; and it appears to me that this never could have taken place unless there had been some original malformation. Upon first opening the abdomen, in both cases mentioned above, the intestines looked displaced and twisted, and the caput cæcum was missed from its usual position in the right iliac region.

On slitting open the intestine at the point of obstruction, we find two mucous surfaces highly inflamed, dark colored and thickened, and covered with a considerable quantity of effusion of a red color, intermixed with whitish matter like coagulable lymph. On laying open the intestine which is invaginated, we then expose to view two serous surfaces, which are also found in a state of inflammation, with exudation and adhesion.

*Treatment.*—The same plan is to be had recourse to as in ileus, only this is altogether a more hopeless case; we are to be more guarded in using strong purgatives, for fear of increasing the torments of the poor little sufferers. It

is said that a natural cure sometimes takes place by a spontaneous separation of the intus-suscepted portion of gut ; and in every extensive collection, a preparation or two of this kind is exhibited.

#### INTESTINAL CONCRETIONS.

SOME remarkable cases of this kind are on record ; but man is not nearly so liable to the complaint as some of the lower animals. A case is published in the eighth volume of the Edinburgh Medical Communications, by Dr. Fitzgerald. The patient, a lady, suffered extreme pain in the hypogastric region, the back, and os sacrum, for eighteen months ; during the last three of which she could not leave her bed, except to be put into the hot bath, which afforded only temporary relief. One day, after receiving an injection, a large, hard, calcareous ball, of an oval figure, was discharged. It exceeded in size an ordinary orange, and so solid, that it required the stroke of a hammer to break it. It weighed eight ounces and three drachms.

Sometimes there are several of these concretions, in that case they may be heard rattling upon percussing the abdomen. Many curious instances of this affection are related in the Philosophical Transactions. The late Dr. Marcet wrote an essay on the chemical history and medical treatment of calculous disorders, wherein notice is also taken of several interesting cases, to which I must refer the reader, as well as to the first volume of Good's Study of Medicine.

It is alleged that the inordinate use of chalk and of magnesia in dyspeptic and calculous complaints, leads to the formation of these substances. Mason Good mentions a case of a lady whom he had once attended ; she "labored under a most painful constipation, till a large mass of what may be called intestinal mortar, was removed by a scoop from the rectum," p. 297, vol. 1st.

*Treatment.*—If the nature of the disease be discovered, large mucilaginous injections ought to be frequently administered, alternately with those of an anodyne nature, to allay irritation. Blisters and leeches may sometimes be necessary, to allay internal pain, and moderate any inflammation that may arise. If such substances can be felt through the parietes of the abdomen, as is alleged, and made to rattle together, it may perhaps be possible to push them on daily in the course of the bowel towards the rectum. In females, I can conceive it to be very easy to break them down when they arrive in the rectum ; and considerable assistance will be afforded by introducing one or two fingers into the vagina. The warm bath is not to be neglected.

#### PROLAPSUS ANI.

By this term is understood the protrusion of a portion of the mucous membrane of the rectum, the sphincter contracting forcibly, and producing a temporary stricture. Prolapsus ani depends either upon a want of power on the part of the sphincter ani, or some violent irritation in the rectum, producing great straining, which, in medical language, is termed tenesmus, during which the



mucous membrane is protruded. It is now much more rare than formerly, owing to the greater attention which is paid to the bowels of children, who are generally the subjects of this complaint. Formerly a pernicious custom prevailed of endeavoring to produce a stool, by making children sit upon a pot containing a little boiling water, instead of giving them physic.

*Symptoms.*—The protrusion takes place when the child is bearing down at stool, or making water; it begins to cry most violently, from the pain in the part affected. On making an examination, the mucous membrane is found of a dark red color; the protruded portion is of various sizes, sometimes as large as a small orange. Formerly a piece of scarlet cloth was applied to the part by the women, under the idea that it would be thus reduced; but now almost every nurse knows how it should be reduced. The child being placed on the back, gentle pressure is to be applied to the protruded portion of gut, by the thumbs of the operator, which have been previously dipped in oil.

People advanced in age are sometimes affected with prolapsus ani; it frequently depends upon diseases of the urinary organs, as well as of the bowels. The parts are occasionally so much relaxed as to require a surgical operation.

#### CONSTRICTION IN THE RECTUM.

Little need be said respecting constriction in the rectum in a work on the practice of physic; indeed, the subject is introduced only for the purpose of drawing the attention of physicians to the subject. I have seen several cases within these few years, in which many dangerous attacks of constipation might have been avoided, had the disease in the rectum been early discovered. This affection may be suspected in every case of habitual constipation, particularly in those instances where the patients have to strain long at stool before the least passage can be procured. Laxative medicines afford only temporary relief, and when too powerful, I have seen symptoms of ileus induced. The only remedy is to be found in the frequent introduction of the bougie. I have been lately consulted in two instances where symptoms of ileus were occasioned by this affection; both patients were permanently cured by dilating the stricture.

## CHAP. VI.

### INTESTINAL WORMS.

---

THERE are principally three kinds of worms which infest the intestinal tube, the lumbricus, tenia, and Ascaris.\*

1st, *Lumbricus*.—It resembles the common earth-worm, and may exist in considerable numbers; instances are on record of upwards of fifty having been voided. Lumbrici lodge in the small intestines, and occasionally in the stomach, and are therefore frequently vomited. They often excite little uneasiness, but in some cases they create considerable constitutional suffering.

2d, *Tenia*, or *tape worm*.—Of this genus, there are two species, the *tenia solium*, and *tenia vulgaris*. The first, as its name imports, is solitary; the second may exist in families. They generally take up their quarters in the higher parts of the intestines; for the purpose, as is supposed, of feeding on the chyle. Tape worms appear to be composed of a great number of pieces or animals joined together by articulations. In the *tenia solium* these articulations are long and narrow; while in the other kind they are short and broad. The solitary tape worm has been known to measure between thirty and forty feet; and one extraordinary worm is mentioned by Dr. Sibbargarde of Copenhagen, which measured thirty-eight yards. The *tenia vulgaris* measures generally from three to twelve feet.

3d, *Ascarides* generally lodge in the rectum, enveloped in mucus; they are the smallest, being only like threads, from an eighth to a quarter and half an inch in length.

Worms chiefly exist in children and sickly adults, and generally depend on some diseased condition of the secretions in the alimentary canal: I believe the inhabitants of Great Britain suffer less from them than any other nation. Mr. Marshall, deputy inspector general of hospitals, informs me that Europeans are very liable to lumbrici in India, and perhaps Africans are more so. Few *post mortem* examinations are made without discovering them. One negro passed forty lumbrici in one day; in seven days he passed altogether two hundred.

\* There is another kind of worm, which is rare—the *trichuris*; but of which I shall not treat, being more an object for the natural historian. Another species, never before described, has been lately discovered in my collection, by Captain Brown, an ingenious naturalist.

Worms frequently produce emaciation, swelled and tense abdomen, gnawing and slight burning pain in the stomach and bowels; irregular appetite; pale, sickly, countenances; foul tongue; fetid breath; irritation and inflammation of the nostrils, occasioning great itching and desire to pick the nose; occasional feverishness, particularly at night, producing restlessness and want of sleep. But none of these symptoms, nor all of them conjoined, point out the positive existence of worms, because they may be produced by any irritation or sub-acute inflammation in the mucous membrane; and it is too much the custom for medical men to conclude that a child has worms, if it is dull, looks pale, and is constantly observed with its fingers in the nose. Besides these symptoms, worms occasionally produce violent colicky affections, with vomiting and purging, sometimes of blood; and, I believe, ulceration of the bowels, and even peritonitis, may be excited by this irritation. More rarely, cerebral symptoms, and even epileptic convulsions, take place. Children who are troubled with worms, often awake suddenly, screaming; and frequently are observed to grind their teeth.

*Treatment.*—The first thing to be done is to endeavor to repair the digestive function, and at the same time, we must institute an exterminating war against such filthy intruders, by means of a class of medicines called anthelmintics. It is curious, however, that the remedy which appears to succeed in one or two cases, will disappoint our expectations in a number of others. Anthelmintics naturally divide themselves into two classes, one which operates mechanically, namely, ordinary purgatives, common oils, sulphur, sea-salt, tin-filings, cowhage; another, which has a peculiar poisonous effect on the animal, as oil of turpentine, hellebore, male fern, tobacco, rue, calomel, and other mercurial preparations. Of all these, oil of turpentine, calomel, jalap, and the cowhage, have been most successful. It deserves to be mentioned, that turpentine, in doses of from one to two ounces, is the only remedy which has hitherto been found generally successful in destroying the tenia. It has been mentioned to me, however, that a decoction of the root of the pomegranate tree, is fully as successful in expelling tenia as oil of turpentine. When turpentine is given by the mouth, care should be taken to have the bowels previously well opened, so that it may not be detained in the intestines. The condition of the stools must be watched, which, together with other symptoms, treated of under the head, “Usual Complaints of Children,” will generally announce whether there be any considerable irritation or inflammation in the mucous membrane. Should such symptoms exist, the application of leeches, or of a counter-irritant, may be necessary.



## CHAP. VII.

### INFLAMMATORY AFFECTIONS OF THE ORGANS CONTAINED WITHIN THE CAVITY OF THE ABDOMEN.

---

#### GENERAL REMARKS.

INFLAMMATIONS of the viscera have been distinguished, since the time of Boerhaave, by anatomical terms, derived from the name of the tissue or organ affected, with the addition of the Greek term, *itis*; as Gastritis, Enteritis, Peritonitis, Arachnitis, &c.

It would be an error to suppose that in inflammatory disorders, the constitution is always disturbed in proportion to the importance of the part affected, and the nature and extent of the diseased action. If the organ be a vital one, the disease is certainly attended with more danger, than if the inflammation attacked an ordinary muscle, or the cellular substance to the same extent; and the disease is much more rapid in its progress; but there is often more pain and a higher fever when the inflammation is situated in the latter tissues, than in the brain, lungs, &c.

The constitutional suffering which happens when vital organs are affected with inflammation, is attempted to be explained by the term sympathy; it is said in medical language, "the organs sympathize with each other." Thus, Dr. Good observes at page 384, vol. II. "When inflammation is seated in the heart, its action becomes extremely agitated and irregular. When in the lungs, the heart, *possibly from sympathy*, does not seem to allow a free diastole."

It would afford me much real satisfaction, if the word sympathy were always employed in medical writings in a strict pathological sense, as I conceive it would be a great step gained in the practice of medicine. It is one of those vague terms too often employed to express a great deal more than we actually know, but which explains nothing; and I have frequently seen it highly injurious in practice,—thus, in inflammation of the stomach and bowels, I have seen the most deadly cerebral symptoms lighted up, which were not treated, because it was supposed the affection of the brain was only *sympathetic*, not real. I have seen the same thing happen in fevers, gout, rheumatism, &c. The word sympathy means, strictly speaking, fellow feeling or suffering, and so far the expression is correct, because, as has already been explained in a former part of this work, diminished action in one organ leads to increased action in another, and any thing going wrong with one important function, embarrasses all the others. Here it will be remarked, that the organs secondarily

affected are diseased, in as much as they are supplied with too little, or with too much blood; or, if the organ affected be excretory, something deleterious is retained in the blood, which poisons to a certain extent the stream of life, producing embarrassment in all other organs, although one may shew it more than another. Now all this shews fellow-suffering,—a tendency which one organ has to sympathize with another. It is to be lamented, however, that this expression is too often used in medicine, in the same sense as it is employed in common conversation.

When inflammation is seated in the lungs, the heart actually does suffer, from two causes; first, because the function of respiration is impeded, and the changes produced on the blood in the lungs are not properly effected; and secondly, because the circulation through the lungs is obstructed. This is certainly accounting for the affection of the heart, better than by stating that it is "*possibly from sympathy*." The same thing happens to the lungs, when the heart is primarily affected; there is dyspnoea and cough, not from sympathy in its ordinary acceptation, but from an increased or diminished supply of arterial blood; and also, by obstruction in the circulation. It may be thought by some, that this statement is quite unnecessary; but it is made under a strong sense of its importance, as I have often had to witness the baneful effects of the term in actual practice.

There is another term, which those who are young in the profession must be cautious in receiving,—it is the word "*debility*." It has already been shewn, that oppression and obstructed action are generally confounded with debility; and I shall take the liberty to make a few remarks with respect to this term, as applied to the system when laboring under inflammation.

Dr. Mason Good, in noticing inflammation of vital organs, observes at the page last quoted, "*The debility commences early, because the inflammation itself is immediately interfering with the actions essential to life.*" The term debility is usually employed in such cases to denote oppression, prostration of strength, inability to allow of loco-motion; but if the inflammation be quickly removed from any organ by bold measures, the oppression ceases to be felt, and the strength is restored by remedies decidedly debilitating. This must ever be kept in recollection in treating inflammations in the first and second stages; otherwise, the term will be apt to induce young practitioners to give bark, wine, and animal food, in cases in which they ought to bleed.

It must be recollected that inflammations are not always acute: perhaps they occur more frequently in a sub-acute or chronic form.

The term acute inflammation, is employed to express the highest degree of this diseased action, which arises suddenly, advances through its course with rapidity, and if not properly treated, terminates in a few days, by altering the structure of the part affected so much, as to render it incapable of supporting life.

The term sub-acute inflammation, is employed to denote a milder degree of inflammation than the former: it arises more insidiously, is less severe, and if

left to itself, does not destroy the structure of the part affected till the second or third week.

In both these cases, we have the combination of symptoms denominated fever, which is higher, generally speaking, in the former than the latter.

The term chronic inflammation, is employed to express a diseased state which follows an acute inflammation that has been partly subdued, as we see sometimes in the tunica conjunctiva of the eye. This term is likewise used to signify an inflammation which begins and advances slowly and irregularly. The patient passes restless nights, with thirst, and a dry burning sensation of the hands and feet, while in the course of the day the extremities can scarcely be kept in comfortable heat; although he is always complaining, yet there is no severe general commotion during the day; he is able to sit up, to take exercise, and even for some time to go through his ordinary duties. His restless nights are too generally attributed to indigestion, proceeding from something which he has eaten or drank,—to an irregular state of the bowels,—want of exercise, or to something which had affected his mind; when perhaps the substance of the brain itself is undergoing slow destruction. In such cases, the common routine practitioner will be found prescribing his tonics, diaphoretics, diuretics, or blue pill, always treating some symptom, the actual disease being hid by an impenetrable cloud from his senses. At length the structure of the part becomes more and more destroyed, till all the symptoms called hectic are fairly established, or the patient becomes comatose.

These observations naturally lead me to notice other points in pathology. It is surprising to find how completely a vital organ may be altered in structure, without producing external signs or symptoms of corresponding violence, provided the diseased action has gone on very slowly. Another circumstance to be attended to is, that one individual, from peculiarity of constitution, will be destroyed by the tenth part of an organic lesion, which a great many others may survive for years, never certainly being entirely well, but able to transact their ordinary business.

The consideration of these circumstances, ought to induce us, in our treatment of diseases, to go on steadily, guided as far as possible by the pathological condition of the body at the time, without reference to accidental symptoms.

When treating of the congestive form of fevers, it was mentioned that inflammatory action might go on concealed under severe congestions. The same observations are equally applicable to purely inflammatory diseases.

---

## ENTERITIC INFLAMMATIONS.

UNDER this title I shall treat, *1st*, of peritonitis. *2dly*, Of inflammation of the mucous membrane of the stomach. *3dly*, Of inflammation of the mucous membrane of the bowels, which will include diarrhœa, the bowel complaints of children, tabes mesenterica, dysentery, and cholera. *4thly*, Inflammation o.



the muscular and cellular tissues. *5thly*, Scirrhus of the stomach and intestines.

#### PERITONITIS.

I shall, in the *first* place, treat of inflammation of the peritoneum in the ordinary state of the system; *2dly*, peritonitis after delivery; and *lastly*, of the chronic form of the disease.

Cullen, by dividing peritonitis into three varieties, has been guilty of a great error, because no one can tell whether it is the peritoneum lining the cavity of the abdomen, or that covering the bowels, omentum, or mesentery, which is inflamed. Although he insists much on the propriety of this division, yet he observes, "it is not proposed, however, to treat of them here, because it is very difficult to say by what means they are always to be known; and further, because when known, they do not require any remedies besides those of inflammation in general."

Although peritonitis may take place most extensively, even to a fatal termination, without affecting the subjacent tissues, yet it is rare to see a case of inflammation of the muscular coat of the intestines terminate fatally, without finding the peritoneum more or less inflamed also.

*Symptoms.*—Like other acute affections, peritonitis commences with a rigor or chilliness, followed by re-action; occasionally, however, as in other diseases, peritonitis makes its approach in the most insidious manner.

The pain differs very much in its extent and severity, being sometimes so slight as scarcely to be complained of, throughout the whole course of the disease; in others, so severe that the patient is unable to cough or to turn himself, and he complains even of the weight of his bed-clothes. The pain is commonly described as being acute tenderness rather than pain; it is sometimes so confined in extent, that the tips of the fingers can cover the part affected. The uneasiness sometimes commences in one part of the abdomen, sometimes in another. Generally it is first felt in one of the hypogastric regions; it does not, however, continue fixed and confined to one spot, but frequently spreads quickly over the whole abdomen. Before death all uneasiness sometimes suddenly subsides, which is apt to impose upon the inexperienced; but the pain on other occasions continues to the last, and this is produced, I apprehend, by the inflammation continuing to spread. Tumefaction and tension of the abdomen occur early; in the first stage, it is produced by tympanitis, but late in the disease, the effusion produces distension. The pulse is not to be depended upon, as it varies much in different cases; sometimes it is full, strong, and quick, beating 120 or 130 in the minute, at other times it is strong and slow, sometimes weak and quick, and very often it beats at the natural standard; but towards the fatal termination it becomes rapid, weak, and intermitting. Vomiting is only an occasional symptom in peritonitis. The bowels are in general easily moved, drastic medicines are therefore not necessary. Thirst is a very general symptom in the pure inflammatory disease, but when the system is

much oppressed by congestion, it is not urgent. The tongue is at first moist, and loaded with a white fur, but soon becomes dry and brown in the centre, and frequently it is observed to be very red at the tip and edges. The breathing is soon affected, if the inflammation be extensive, from the pain which the motion of the diaphragm produces upon the tender peritoneum, as well as from the disordered state of the circulation. In the latter stage, however, the breathing becomes laborious, not only from the extensive effusion in the belly, and the increased disorder in the circulation, but frequently also from the pleura partaking of the inflammation. The head, in most cases of acute and deadly inflammations of other parts, can scarcely escape embarrassment in its functions; therefore, we have almost always headache, if minute inquiry be made, and occasionally delirium. When the peritoneal coat of the stomach is inflamed, the symptoms appear to be much more violent than when the disease affects any other part; the pain is more severe, the vomiting incessant and intractable; the features collapsed; the pulse small, and the powers of life sink rapidly;—this description will be found to correspond to that of the gastritis of authors.

*Causes.*—Cold and fatigue, which occasion partial determinations of blood, and an irregular state of bowels, sometimes produce this disease, as well as contusions and wounds; sometimes it follows surgical operations.

*Pathology.*—Until lately this was not understood. Cullen was unacquainted with it, and so was Dr. Gregory, I believe, to the latest period of his life. Many people of the present day, cannot fancy how it comes to pass that there is so much effusion with so little vascularity, but there is now no doubt that the effusion is produced by inflammation of the peritoneum itself.

In addition to the observations already made on the effects of inflammation on serous membranes, at page 21, &c. of this work, and those which will also be found at page 275, I may now remark that the absence of vascularity is no proof of the non-existence of inflammation; pathologists rather trust to the well known results of that action, which have also been established by experiment. Peritonitis was produced in dogs, which were then killed, and the vascularity, if recent, disappeared in the act of dying.\*

*Treatment.*—Bleeding, both general and topical, is to be had recourse to; in very slight cases we may trust to local bleeding by leeches, but when the inflammation is severe, the lancet should be used to such an extent as the nature of the case demands, so as to make a decided impression upon the disease, and upon the system. Some physicians are, I believe, still in the habit of ordering the precise quantity of twelve or sixteen ounces of blood to be drawn in all cases, whether the disease be slight or severe; the patient robust or weakly; at the beginning of the disease, as well as at any time during its progress. In all cases, the operator should be left to his own judgment as to the quantity, because he alone can judge of the effects, unless the physician chooses to attend himself; more than two or three hours should not elapse between the bleeding

\*Vide Archives Générales for December 1823, and January, 1824.

and the next visit, when it is to be determined whether the operation is to be repeated, or leeches applied. Perhaps it may not be found necessary to have recourse to either the one or the other, but we are nevertheless still to be on the watch. Laxatives are to be frequently repeated, assisted by large unstimulating tepid injections. There is no necessity in this disease for giving drastic purgatives, because the bowels are in general not difficult to be moved; and if they should be found obstinate, two grains of calomel, and six of rhubarb, repeated every three hours, will produce more satisfactory stools, with less danger of producing irritation, than five grains of calomel and a scruple of jalap. As soon as the bowels are opened, an opiate may be given if there be any restlessness. Fomentations with very hot cloths are often serviceable in mitigating the pain, but it is not yet decided whether they are more or less beneficial than cold applications. Blisters are not to be had recourse to till late in the disease; and when they are thought necessary in serious cases, the abdomen should be completely covered.

Many practitioners have great faith in digitalis in such cases, as a counter-stimulant, in doses of ten, fifteen, or twenty drops of the tincture, repeated four or six times in the twenty-four hours; but although I have seen it tried in many acute cases of peritonitis, it has never operated beneficially, and in such an acute disease, no confidence can be placed in any remedy which requires that we should wait twenty or thirty hours for its effects in controlling the circulation. If a remedy of this class be wanted, we possess a far better one in antimony; and better still, in acute affections of the bowels, in tobacco, which is to be administered by injection.

If the patient be affected with distension of the abdomen from tympanitis, we have an admirable remedy in turpentine by injection, in the proportion of half an ounce, or an ounce, in eight or ten ounces of gruel, or it may be put into the tobacco injection. The regimen is to be strictly antiphlogistic.

#### PUERPERAL PERITONITIS, VULGARLY CALLED PUERPERAL FEVER.

The nature of this disease is inflammation, and its seat the peritoneum, so that it is exactly the same as the last affection treated of, but modified by the peculiar condition of the woman, and the nature of the prevailing epidemic.

*Symptoms.*—There are too varieties of puerperal peritonitis, purely inflammatory and the congestive; and I shall hereafter explain the reasons why the latter more frequently occurs in this, than in the ordinary condition of the system.

It is not necessary that I should enter into a detail of all the symptoms, because they are the same as those already described in common peritonitis. It will be sufficient to notice some of the peculiar symptoms which Dr. Hamilton and other symptomatical physicians call pathognomonic, or, in other language, symptoms which are present only when the disease is present, and absent when the disease does not exist. These are pain in the belly, the state of the pulse, tympanitic distention of the abdomen, pain in the forehead, and the condition of the discharge which takes place after delivery, called the lochial discharge.



Mr. Burns, as well as Dr. Hamilton, has endeavored to make it appear, that in peritonitis the pain is very severe; whereas in what they choose to call puerperal fever, the pain in the belly is slight, or, to use the words of Mr. Burns, "abdominal pain is not the most prominent symptom." Dr. Hamilton is exceedingly angry at a statement made by me in my work on "puerperal fever," that in his cases the pain in the belly was very acute, which he has been at much pains to deny in a letter printed in a celebrated pamphlet, which it has since been necessary to suppress; but that the Doctor has been guilty of a subterfuge not very credible to him, is easily proved, by looking back at his own account of the symptoms of the disease, in the old editions of his work. In the edition 1813, page 202, will be found the following passage: "In many cases the pain in the belly is such, that the weight of the bed-clothes proves intolerable." But even allowing that the pain is often sub-acute, and not much complained of as a prominent symptom, it is no more than we frequently meet with in peritonitis in the ordinary state of the system. Dr. Abercrombie, in giving an account of the pain in common peritonitis, says, "and in some cases, it is little complained of, except when pressure is applied, being rather acute tenderness than actual pain." \*

Much stress is laid upon the pulse, by these gentlemen, in the form of the disease under consideration. They try to make it appear, that in common peritonitis it is always "frequent, small, and sharp," whereas in this disease it is fuller, but soon becomes feeble. It will only be necessary to quote another short passage from Dr. Abercrombie's paper, to shew the absurdity of this distinction. "The pulse (says he) is frequently little affected, especially in the early stages. It may be from 80 to 90, or 96, but is sometimes scarcely above the natural standard."

Early tumefaction of the abdomen is supposed to be peculiar to puerperal peritonitis; but as no professional man, who has been in the habit of treating inflammation in the abdomen, whose opinion is of any value, will again hazard such an assertion, I shall pass it over without further notice, as also the pain in the forehead.

*Lochial discharge.*—All the authors who have written upon this subject, including Mr. Burns himself, state that the lochial discharge is variable,—that it sometimes flows as in ordinary cases, in some it is diminished, and in others suppressed. Dr. James Hamilton jun. maintains that it never ceases in the true puerperal fever; and that it is "*one striking mark of distinction between diseases which resemble each other in the prominent characters of fever and pain in the belly.*" Thus endeavoring to draw pathological distinctions from one symptom, confounding, as is his usual custom, cause and effect.

Diarrhœa sometimes occurs in the course of this disease, and is always to be regarded with anxiety. If the secretion of milk have taken place, it almost always recedes, and the breasts become flaccid; but the disease generally

\* Edinburgh Medical and Surgical Journal, vol. xvi.

makes its attack before the secretion of milk commences, in which case it does not appear till two or three days after convalescence takes place.

*Appearances on dissection.*—Dr. Abercrombie's account of the appearances found in peritonitis, occurring in the ordinary state of the system, is as follows: "On dissection we find uniformly effusion of coagulable lymph, in some cases very extensive; and frequently effusion of a turbid or puriform fluid, sometimes in considerable quantity. Gangrene is rare, and as far as my observation extends, never occurs as the prominent appearance, it being, when it does occur, slight and partial, and always accompanied by extensive deposition of coagulable lymph."\*

The following statement of the appearances found in the cases which were treated by Dr. James Hamilton, jun., in the Lying-in Hospital, was published in the inaugural dissertation of his pupil Dr. Torrance, and acknowledged by Dr. Hamilton to be correct.

"We found (says Dr. Torrance) appearances similar to those observed by Hulme and Leake in the London hospitals. On examining the abdomen, fetid gas sometimes issued from it. A fluid was always found in the cavity of the peritoneum. When the effusion was in small quantity it resembled milk, and *joined the intestines together like glue*; but when in a large quantity, it had the appearance of whey, and the adhesions were not so strong. We found small, whitish portions of this matter in the folds of the intestines, which, when stirred, gave an appearance of milk to the effused fluid. The peritoneal coat of the intestines had lost its usual pellucid appearance, felt hard, and ramifications of red vessels were conspicuous. These traces of inflammation, however, were not such as they should have been merely from an effusion of fluid into the abdomen. The peritoneal coat of the stomach seemed always sound. The muscular and cellular coats of the intestines, were sometimes affected by an effusion between them. The villous coat was almost always natural. About four or five pounds of a fluid resembling coffee, was found in one or other of those affected.

"The omentum in some cases firmly adhered to the intestines, and its substance was so much affected, that it was torn in many places before it could be separated from them; but it never seemed mortified, nor was it dissolved into a purulent matter, as Leake and Hulme say they have seen it. The internal surface of the uterus was sound, and never affected with inflammation. Suppuration of the ovaria was sometimes manifest. In two or three cases, it seemed that the pleura had been involved in the inflammation, viz. by effusion, and other signs sufficiently marked."

*Pathological remarks.*—1st, The peritoneum is the tissue affected by inflammation in this disease, which extends itself throughout the whole extent of the membrane, without attacking one portion more than another, except that part of the peritoneum which forms the broad ligaments, in which situation, it

\* Edinburgh Medical and Surgical Journal, vol. xvi.

it is probable, the disease first commences. Nevertheless the inflammation does not always appear to be general, the traces of its existence being sometimes confined to particular spots.

*2dly*, The effused fluid found in the abdomen of women who have died of peritonitis, has nothing peculiar in it; it resembles a similar effusion found in peritonitis in men, and in the thorax of those who die of pleurisies. It varies in consistence and colour in all these cases, but it is generally a white or reddish serous fluid, containing flakes of albumen, more or less abundant, according to the intensity of the disease; and sometimes it has a puriform appearance.

*3dly*, The substance of the uterus has rarely been found diseased, in this country at least, in any other degree than being sometimes large, flabby, and tender. But we have accounts of fatal epidemics on the continent, more particularly of one which occurred in Paris in 1829, in which not only the uterus, but the venous and lymphatic systems, suffered much.\*

*4thly*, If a patient die in the early stage of peritonitis, we may find little vascularity, particularly if much blood has been drawn, although we are certain, from the previous symptoms, that inflammation had existed. If the patient survive longer, however, then we shall see the sero-purulent effusion. If the patient live still longer, the quantity of effusion is increased, and masses of coagulable lymph will be found glueing the intestines very slightly together. If the patient live still longer, the intestines will be matted together, and false membrane will sometimes be found covering the liver, spleen, and uterus, and the peritoneum itself will then be seen very vascular, and much thickened.

*5thly*, The pleura is frequently found inflamed in this disease, as indicated by a similar sero-purulent effusion; and there is sometimes evidence of inflammation in the brain.

*6thly*, This disease is more rapid in its course and fatal in its termination than ordinary peritonitis, from the peculiar condition in which a woman is left after parturition. In the *first* place, there has been an increasing determination of blood towards the uterine region during the previous nine months; and in the *second* place, an increase of nervous irritability. So that the balance of the circulation is left at this period in a very disordered condition, being readily upset upon the application of any of the usual causes; and when upset, the blood naturally takes its course towards the abdomen.

These are at least some of the reasons for the venous congestion which takes place in many cases, in a greater or less degree, particularly in women who have been worn out by breeding, or who have been debilitated by previous disease, or insufficient food and clothing. In these cases, the heart and other vital organs are so much oppressed, that they cannot create re-action, or the system is too weak to do so. In one set of cases, speedy death takes place, the patient sinking without any marks of local disease, unless it can be said to

\* Vide Archives Générales for March and April 1830.



be indicated by vomiting and diarrhœa, with some confusion of intellect. In another set, although considerable congestion has taken place, it is not to such an extent as to destroy the patient; inflammation attacks the peritoneum under a suppressed re-action, and it goes on with a surface which is almost bloodless; therefore there is little or no heat of skin; the pulse is small and weak; the expression of the countenance ghastly; and the pain in the abdomen perhaps sub-acute. There are various shades and degrees of this complaint, according to the various combinations of these two conditions of the system.

There are three other causes which enable us to account for the rapid march and fatal termination of puerperal peritonitis. The *first* which I shall mention is the occurrence of inflammation of that part of the peritoneum which covers the stomach, giving rise to those most violent symptoms which are described by authors under the title of gastritis. In a majority of the fatal cases which have fallen under my notice, the peritoneum covering the stomach was highly inflamed; in several cases the whole stomach was in a softened state; and in all these cases there were most violent gastric symptoms. In the *second* place, inflammation of the peritoneum frequently takes place before delivery; sometimes as the original disease, and occasionally from the extension of inflammation and ulceration from the mucous membrane of the intestines. The natural pains conceal the disease during parturition; afterwards the pain from inflammation is mistaken for after pains; and before alarm is taken, the patient is generally lost. I have seen many examples of this since the publication of my treatise on puerperal fever, and I think I am now able to anticipate what is likely to follow delivery. I have lost only one patient out of between fifty and sixty who had the disease. In the *third* place, something may be fairly attributed to the nature of the prevailing epidemic.

*Treatment of puerperal peritonitis.*—The only difference which exists between the treatment of peritonitis in the ordinary condition of the system, and that which is now under consideration, proceeds from the two following circumstances: We have a more severe and extensive inflammation to subdue, which is more frequently combined with venous congestion, which suppresses the inflammation, and deceives the practitioner. If peritonitis attack a woman during the first two or three days after delivery, and is neglected for twelve hours, nay, in many instances, for six, any means we can employ will, in all probability, be unavailing. It is for this reason that I would rather treat the disease in an hospital than in any other situation. A physician, under such circumstances, requires almost to live with his patient, at least he should not be away from her bed-side for more than two hours at a time; nor will this be a great hardship, should he even have five or six such patients on his hands at a time,—the battle is to be won or lost in the course of twenty-four hours: but should it be sixty, a medical man must be always prepared to sacrifice his interest, and to disregard bodily fatigue, when the life of a fellow-creature is at stake. If he will rest upon a bed of roses, scarcely a patient affected with this disease will be saved: and if Dr. Hamilton visited his poor patients in the Lying-in Hos-

pital only twice a-day, it so far enables the profession to account for Dr. Torrance's conclusion with regard to the practice pursued. "Copious bleeding therefore, however much praised by Gordon, Armstrong, and Hey, in private practice, has always, on this recent occasion, deceived the hopes of the physicians of the Lying-in Hospital of Edinburgh, and has been from necessity laid aside." Dr. Torrance says enough in one paragraph to show the profession the puny manner in which the bleedings were executed,—that they were adopted "*without any alleviation of the symptoms*;" and the reader will be astonished when he is told the reason why Dr. Hamilton appears to have under-bled, particularly after perusing the above sketch of the appearances found on dissection. He conceives that the effusion of coagulable lymph, and the consequent glueing together of the bowels, are produced by the bleeding; but he shall speak for himself. "It appeared to me, (says he,) that the effusion into the abdomen was accelerated by the bleeding."

Upon further experience, I can speak with much confidence of the advantage of applying leeches. Many cases could be quoted, where one hundred, one hundred and fifty, two hundred, and two in which two hundred and forty were applied, first and last. They were very unpromising cases, but the ladies are now in the enjoyment of perfect health and strength. Leeches are to be applied in numbers according to the age and constitution of the patient, and the period of the disease; but it must be mentioned, that some constitutions cannot bear their application. Whenever we are in doubt, therefore, it is better to apply fewer than we would otherwise do, and repeat them according to circumstances. An ordinary constitution can well bear the bleeding from two dozen, and plethoric individuals from 50 to 100 at one application. When it is time to check the oozing of blood, we should see it done. In one case, of a delicate lady who was laboring under peritonitis, twenty leeches were applied to the abdomen. Her husband was a medical man, and he ordered the nurse to stop the bleeding; she told him it had already stopped, and he went out on necessary business. On his return, he found his wife in the utmost state of exhaustion; upon examining her abdomen, he found only one orifice bleeding, but the blood was coming *per saltum*. One of the leeches had penetrated a small branch of an artery. Stimulants were necessary, and she recovered from the state of syncope. This case is merely mentioned as a warning to young practitioners.

In the congestive cases, bleeding is to be had recourse to if called early, and if the pulse still possess sufficient strength. Stimulants may be necessary at the same time, and I have already shown that stimulating and bleeding in such cases are not inconsistent with good pathology. The warm bath, stimulating frictions, and also large blisters, are to be applied; and subsequently calomel and opium may be used, together with the application of leeches. Considerable suffering, and many relapses, depend on a tympanitic state of the bowels. By percussion this state is discovered, and the best remedy is an enema, composed either of oil of turpentine or assafœtida.

It is scarcely possible to give sufficiently precise directions regarding the circumstances which indicate the necessity for stimulants. Suffice it to say, that an experienced person derives the necessary information from the heat of the surface, condition of the pulse, and the expression of the countenance. If the surface be cold, or even cool, particularly if there be a cold clammy sweat; if the pulse be weak, irritable, or irregular and weak, and if the expression of the countenance be ghastly, no one could entertain a doubt as to the propriety of exhibiting stimuli at the termination of any inflammatory disease.

Before concluding this subject the proportion of deaths may be stated under each system, to enable the reader to draw his own conclusions.

The celebrated Dr. William Hunter saved one patient only out of thirty-two; his practice became fixed to give a good wine glass full of brandy at the commencement of the disease.

Dr. Hulme, who considered the disease partly of a putrid nature, and who employed bleeding in small quantities, and only as a secondary remedy, lost almost every patient.

Dr. Leake, who recommended bleeding in small quantities, and at long intervals, and who gave his patients bark, beef tea, and cordials, to prevent putridity, lost thirteen out of nineteen patients in one season.

Dr. Gordon, when he adopted a weak, vacillating practice, lost twenty-three out of twenty-seven cases; but afterwards he used early and large bleedings, and out of fifty he lost only five.

Mr. Hey, of Leeds, saved only three out of thirteen cases, before he began to bleed; but afterwards he was led by sad experience, to bleed boldly and early, and he lost only two out of thirty-six patients.

Dr. Armstrong, who seems to have profited early in life by the experience of others, assures us he only lost five out of forty-three.

On perusing this statement, the reader will perceive the dilemma in which Dr. Hamilton is placed, and will perhaps say in his own mind, that there is no hole through which he can escape; but alas! he does not know the ingenious doctor; he will always escape, but always in a manner peculiar to himself. The reader will say, he cannot now assert that their cases could not be cases of puerperal fever because they had the lochia suppressed. It is indeed to be hoped he is not now guilty of such a blunder. What will the reader say, then, if Dr. Hamilton were to try to escape from the dilemma, by such an extravagant statement as the following? Suppose he were to say, he held his fatal cases, in which bleeding failed in curing the disease, to be more certain proofs of the inefficacy of bleeding, than the production of forty five cases where the patients recovered when bleeding had been used; for the cases might not be of puerperal fever at all, as had really happened in those cases cited by Drs. Gordon and Armstrong, and Mr. Hey of Leeds, where theirs terminated favourably under the lancet; or if they were really cases of the disease, he maintains that not the bleeding, but a natural change in the constitution, going on before that remedy had been employed, had effected the cure. His fatal cases afford posi-



tive proof; the forty-five favorable cases afford only negative. The reader may here say, it is impossible that any professor could make such a statement; my answer to that is, that I shall be glad to be afforded an opportunity, upon Dr. Hamilton's authority, of denying that he could ever have committed such an outrage upon common sense.

In Dr. Abercrombie's work on the bowels, p. 189, the following passage will be found:—"I have little doubt that women in the puerperal state are liable to two distinct forms of peritonitis, which in the discussions on this subject, have probably not been sufficiently distinguished from each other." The only conclusion which can be drawn is, that the author never perused the works to which he makes such a faint allusion. The two distinct forms, answering precisely to the description by Dr. Abercrombie, were most emphatically pointed out by the late Dr. Armstrong, and more recently by myself. I could give a true explanation of Dr. Abercrombie's speculation; in the meantime I shall leave him to enjoy the reward of his discovery.

#### CHRONIC PERITONITIS.

THIS form of disease sometimes succeeds to acute action in the tissue itself; sometimes it is occasioned by the extent of ulceration from the mucous coat of the bowels; and occasionally it is itself the primary disease, in which case the attack is often very insidious.

*Symptoms.*—Pains are occasionally felt in various parts of the abdomen, with a sense of weight or oppression; the pains come on in paroxysms, which are sometimes very severe, at other times a pricking sensation only is felt. In some cases pain is not a prominent symptom, the belly is tumid, with occasional tightness, while the rest of the body emaciates, and the strength declines slowly; fever is often present, that is to say, the pulse is quick, of variable strength and fulness, with thirst and restlessness. The tongue is in various states, either loaded, or very red, or both; constipation is a usual attendant for some time, but subsequently diarrhœa generally takes place; the stools often have a very natural appearance. The patient in all cases also experiences a sense of increased weight and uneasiness in the abdomen after a meal.

Chronic peritonitis runs its course to a fatal termination in various periods; I have known it of eighteen months standing, and sometimes the patient is destroyed in a few weeks. In the last stage the symptoms become aggravated; the features shrink; emaciation takes place to the greatest possible extent, and sometimes death appears to be owing to the patient's being worn out, or from an attack of constipation, resembling all the symptoms of ileus, or from the supervention of acute inflammation, perhaps in the cavity of the thorax, all of which terminations I have seen.

It is in general a fatal disease, but I have seen some wonderful recoveries, if one may be allowed to judge from the appearances of thickening of the peritoneum, and extensive adhesions in the bodies of individuals who had survived the attack for a number of years, enjoying a tolerable share of health, and dying

at last from the effects of other diseases. I lately attended a child who was observed to fall off in health and strength, and to complain occasionally of abdominal pain; he was feverish at night, but during the day was able to play about with the other children of the family; his body emaciated, while the abdomen became larger. Suddenly a decided change for the worse took place. The abdomen became more distended and painful, the fever increased, and he was confined to bed. In a few days a fulness was observed in the umbilical region, and an inflammatory blush. A natural opening soon took place, and a bilious-looking matter was discharged, with portions of food, such as barley, &c. When the discharge ceased, the symptoms became aggravated. He lived for some months. On examining the abdomen after death, there was an appearance of an abscess extending for several inches around the umbilicus, and immediately in contact with the intestines, round the circumference of which there were strong adhesions. In this cavity there was matter similar to that discharged through the external opening. On looking attentively at the parts, there were found nine openings into different parts of the intestinal tube. Some of these were large, others small; the orifices were ragged, and appeared to be the effect of ulceration, which opinion was amply confirmed by a minute examination of various portions of the mucous membrane, in which ulcerations in various stages were observed. The contents of the abdomen were all matted together, and the mesenteric glands were enlarged, and the mesentery thickened.

Chronic peritonitis is sometimes mistaken for other diseases, chiefly for dropsy, dyspepsia, and hepatitis.

*Causes.*—It has been already stated, that this disease sometimes follows an acute attack, and as the consequence of it; from the extension of ulceration from the mucous coat of the bowels; hence it sometimes occurs as one of the sequelæ of fever, diarrhœa, dysentery; and it is occasionally caused by external violence. It may also be produced among the children of the poor by insufficient clothing, the use of unwholesome food, as well as by the continual irritation from worms. In women it sometimes occurs at that period of life when the menstrual discharge ceases. It is probable that chronic peritonitis is often the consequence of irritation, produced by dysmenorrhœa, tumors growing from different parts of the uterine system, and by extra-uterine pregnancies.

*Appearances on dissection.*—The whole intestines are sometimes agglutinated into one solid mass, involving the liver, spleen, and other parts; generally, however, we find only the intestines and omentum in that condition. Occasionally it is seen to affect the liver and parts in its neighbourhood, which are covered with a false membrane that can be readily peeled off, leaving the peritoneal coat attached to the organ. The disease may be confined to the contents of the pelvis, as is sometimes seen in scirrhus affections of the rectum and uterus, and diseases of the ovaria. It appears to me, from the repeated examination of extensive adhesions of the pelvic contents, in connexion with a small and circular os uteri, that chronic inflammation of the peritoneum may hereafter be found to be produced by the constant suffering, and consequent

state of irritation, during the course of dysmenorrhœa. Occasionally the peritoneum is thickened every where without adhesions, but this is more frequently observed when there is an effusion of a serous fluid into the cavity of the abdomen, and particularly if it exist in any quantity. Sometimes the effusion is puriform. The colour of the peritoneum varies exceedingly; it is sometimes almost as red as if painted with vermillion, with large and red vessels ramifying in different directions; sometimes the redness is confined to particular spots, as if produced by ecchymosis, in other places it is yellow, blue, purple, slate-coloured, black; but perhaps some of the colouration may be owing to *post-mortem* changes. In some rare instances, the peritoneum appears smooth; in general it is rough from irregular elevations; ragged, which last appearance is sometimes, though rarely, produced by ulceration; most frequently it is occasioned by the rough state of the membrane itself, and by very fine long irregular bands forming adhesions. On some occasions, the peritoneum presents partial fungosities, slightly elevated, extending in patches of irregular shapes, and of a red colour, looking very much like a coagulated bloody effusion. Chronic inflammatory action in the peritoneal coat, is a frequent cause of tubercular formation. I have seen tubercles in the peritoneum lining the general cavity, covering the intestines, stomach, liver, and spleen; also in the peritoneum which forms the omentum, mesentery, and meso-colon. Sometimes the mesenteric glands are also affected, but I have never seen them so without finding the corresponding part of the mucous membrane of the intestine inflamed, more generally extensively ulcerated; so that I apprehend the too sweeping term *scrofula*, has been applied to these formations upon limited or erroneous pathological views. The tuberculated state of the peritoneum generally takes place after the lungs have been attacked with the same disease; sometimes from chronic inflammation of the peritoneum, particularly when it succeeds to external violence. The tubercles on the peritoneum are sometimes of the miliary kind, sometimes hard, and of various sizes up to that of an orange, occasionally resembling masses of coagulated blood; at other times having very much the character of the diseased structure termed medullary sarcoma, and they exist either singly or in groups hanging like bunches of fruit.

This description is drawn from cases and dissections which have fallen under my own observation; and my museum and portfolio contain preparations and representations of all the morbid appearances above stated, which were capable of being so preserved. The reader, however, is referred, for further information, to the works of Dr. Baron, who is well known to the profession as a useful and zealous cultivator of pathology.

*Treatment.*—The disease is frequently a hopeless one, before medical advice is sought; but if the case should be ever so hopeless, it is the duty of a physician to use his best exertions up to the very period of death, as remarkable recoveries have been known to take place; indeed, I have remarked, that in proportion as pathology has advanced, the old practice of “giving up” patients has declined. We can almost always mitigate the violence of the symptoms,



and place the patient in a comparatively comfortable situation, when there can be no hope either of curing the disease, or of prolonging life. The question of general bleeding can rarely be entertained, yet I have met with some cases in which it was loudly called for, and was productive of benefit. The frequent application of leeches, whenever a patient complains of pain, is of great service, together with counter-irritation, produced either by stimulating embrocations, tartar emetic ointment, or common blisters. Hot applications to the abdomen may be useful, together with the frequent employment of the warm bath. Assiduous attention to the bowels, however, forms almost the most essential part of the treatment; this is to be done, not by strong purgatives, but by very gentle laxatives, united with hyosciamus, and large tepid unstimulating injections, used regularly once, sometimes twice a-day. I have seen opiates serviceable, but their use is often contra-indicated by constipation. The employment of drastic purgatives in these cases cannot be defended, and I have known, within my own experience, three cases in which they produced fatal attacks of acute peritonitis. It is almost unnecessary to add the importance of attention to the diet, which should be nourishing, but bland and unstimulating, as well as easy of digestion. Ass' milk once or twice a-day, is therefore to be employed, but patients should avoid distending the stomach much, and taking any article which they know from experience will produce flatulency, as the violent paroxysms of pain, which have been mentioned in the description of the symptoms, may frequently be traced to the presence of flatus. The knowledge of this will therefore lead us, during such a paroxysm, to give a carminative, but what will answer better, a turpentine injection, containing a dessert spoonful of that substance. Exercise should be avoided, if motion produce even the slightest uneasiness.

---

## INFLAMMATION OF THE MUCOUS MEMBRANE OF THE STOMACH AND BOWELS.

BEFORE treating of the different diseases depending upon morbid states of the mucous membrane of the stomach and bowels, it will be of advantage to the student, to give a sketch of the different changes produced by inflammation in that tissue.

It is a point of the first importance, to determine the natural condition of the mucous membrane, in order to enable us to ascertain the appearances produced by disease. It is admitted, I believe, by every one, that the mucous membrane of the stomach and bowels presents, in the most healthy state in which we see it after death, a whitish appearance, with a slight tint of rose color; that although blood-vessels may be seen here and there, yet they are not to be observed arborescing in great numbers, nor do we see any discolored patches, unless there has been some great impediment to the circulation, or they have been produced by a natural change towards decay. Indeed, it is to be appre-

hended that some of the tints described with so much minuteness and accuracy by French pathologists, may be attributed to this last cause. It is stated, that the stomach becomes more vascular, and of a redder color, during the act of digestion, than at any other period, which appears to be very probable, and may account for the red appearance found in the bodies of criminals after execution.

On opening the stomach of an individual who has suddenly died from accident, or from some disease unconnected with the bowels, the mucous membrane will be found slightly coated with mucus, which is not difficult to remove; and if the body have been opened within two or three days after death, it will be found in numerous folds or rugæ, which seem to be produced by the contraction of the muscular coat of the organ, leaving the mucous membrane free, so that it forms itself into folds, which I conceive have nothing to do with a diseased condition of the inner membrane itself. In a healthy state the mucous membrane is not easily abraded.

The part of the stomach which appears to be most liable to inflammation, is the splenic extremity. In considering the diseased appearances of the stomach and intestines, it will be best to do so under the following four heads, viz. *color, vascularity, exudation, alterations of structure.*

1st, With respect to the color, we have to determine whether or not it be owing to *post-mortem* changes; and we must also be careful to avoid the error into which Broussais and his disciples have sometimes fallen, of attributing every change of color to inflammatory action. I must refer the reader to Dr. Yellowly's observations on the vascular appearances in the human stomach, which are frequently mistaken for inflammation in that organ,\* and more particularly to the first and third cases, in which the whole intestinal canal was minutely injected with dark-colored blood in individuals who suffered the last sentence of the law. In these cases Dr. Yellowly very properly supposes that the circulation is carried on in the capillaries for some time after death. The appearance of the vessels, the exudation, and the structure of the mucous membrane itself, will, however, generally inform us, whether the color described in Dr. Yellowly's paper is fortuitous, or owing to diseased action.

We must also be careful to distinguish whether the color depends on infiltration of blood into the sub-mucous tissue, or on inflammation of the membrane itself. A section of the part will shew this at once; for on looking at the cut edges, we shall see the mucous membrane separated from the muscular coat by the infiltration; the former having its usual healthy appearance. But if must be recollected that inflammation and infiltration very frequently co-exist; and when we wish to decide whether the mucous membrane is discolored, the suspected part must be extended upon the finger, and a scratch made with a scalpel through the mucous coat itself, which will give us an opportunity of ascertaining its vascularity and structure. The chief discolorations of the mucous

\* In the 4th vol. of the London Medico-Chirurgical Transactions.

membrane resulting from disease, are, bright red, dark red approaching to purple, brown, slate-colored, and black. I do not notice minute shades of these colors, because they are unimportant; nor shall I mention a number of other discolorations which I have seen on dissection, because they are very doubtful signs of disease. It must be confessed, after all, that we are very liable to be deceived about the color, as it is the most frequent, and, I apprehend, the first *post mortem* change which takes place.

2dly, *Vascularity*. Our attention should, in the first place, be directed to ascertain whether the vascularity is arterial or venous; if the latter, large, dark-coloured veins will be observed ramifying under the mucous membrane, and there will be few minute, arborescent vessels containing the blood. In fact, we shall see the appearance which Dr. Yellowly has so faithfully described in the two cases already quoted; in the first of which, "the whole of the abdominal viscera were loaded, as if by minute injection, with dark-coloured blood. *Here and there, however, there were florid vessels, which were distinctly traceable into dark-coloured ones.*" In the other, "the whole of the intestinal canal was minutely injected with blood, which was, for the most part, of a *dark crimson or purple, but here and there of a florid hue.*" If the vascularity be arterial, and connected with inflammatory action, we shall see red points, or numerous red vessels running in lines or patches, with or without ecchymosed spots in the mucous membrane. We shall observe them not in the depending parts only, in which situation they are always doubtful signs of inflammation, unless accompanied by a corresponding exudation or alteration of structure. It is always necessary to make a section, first of the mucous membrane, and then of the other structures, to prove whether the vascularity exists in the mucous coat or in the other tissues, or in all of them; if in the former, a slight cut made through the mucous membrane will divide the vessels, a little blood will exude, and the parts beneath will have the natural white appearance; and, upon tearing away the mucous membrane with a pair of forceps, the white appearance of the subjacent parts will be still better seen. The vascularity is doubtful when there is disease of the heart, or any other cause which obstructs the circulation. Even in that case, however, I imagine the vascularity must be regarded as a diseased appearance; and, particularly, when it is recollected, that it frequently terminates in inflammation, and even ulceration, as will be shown hereafter, when treating of phthisis.

In estimating the extent of the vascularity, we ought to recollect that it must diminish very considerably after death, and particularly in recent inflammations. The tunica conjunctiva of an ophthalmic patient, loses its turgescence and redness at death, or soon after.

3dly, *Exudation*. The first effect of inflammation on all secreting surfaces, is supposed to be a diminution of the natural secretion; but it is not certain whether this holds good in the mucous membrane of the stomach and bowels. In several instances it has presented a dry appearance, but these were *standing* chronic inflammation. The exudation merits our careful



tion with regard to its tenacity, quantity, and colour. If it be viscid, and in considerable quantity, upon a surface which presents many red vessels, however partial the vascularity may be, it is to be regarded as the product of irritation or inflammation. It varies very much in colour, from that of ordinary mucus, to pus; and a red matter like currant jelly is frequently found; the exudation has been represented to be occasionally so corrosive as to excoriate the fingers of the dissectors; but it is probable there is some mistake about this statement. There can be no doubt, however, that the mucous membrane yields a large quantity of thick tenacious mucus, colourless like starch, when it is under the influence of any kind of irritation; this is well illustrated in the experiments performed with the tartrate of antimony in considerable doses, which were published by me in the 258th number of the *Lancet*. With respect to the red exudation, two kinds are observed; one, like very red currant jelly, which is produced when the membrane is under a high degree of inflammation; the other, of a much darker hue, darker even than venous blood, more fluid than the other, and occasionally discharged in very large quantity; this will in general be found in cases where there is great congestion of the mucous membrane, along with some degree of inflammation. A similar discharge often takes place in diseases of the liver and spleen.

*4thly, Alterations of structure.* The first appearance which falls to be noticed, is the pulpiness, with thickening of the mucous membrane. When it is in this state, the surface, if closely examined, looks rough and granular, and the membrane can be easily rubbed off. Abrasions are sometimes seen, but are not so frequently the result of acute inflammation as of chronic; at all events, they are not so extensive. This is an appearance, however, concerning which we are very liable to be deceived; for when the membrane is soft, abrasions are easily produced by handling. Those which are produced by disease, will be readily recognized by placing the part in water, a portion will be entirely wanting, the edges will look ragged, and the surrounding part will be found detached. Ulcerations are now known to be a frequent result of acute inflammation; but there is some degree of ambiguity about the tissue primarily involved. Some allege that they exist in the glandular structure, others in the mucous follicles; while there are some who assert that the ulcerations take place in the mucous surface generally. My belief is, that all these opinions are partly correct.

It is now well ascertained that some parts of the mucous membrane of the stomach and bowels are more liable to inflammation and ulceration than others. The inferior half of the ileum is the part most frequently found inflamed and ulcerated; according to my experience, the colon stands next to the ileum, and it is an extraordinary fact that the jejunum is seldom affected. Why it should possess this remarkable immunity from disease, has never been explained. In a case of poisoning from corrosive sublimate, it was in a healthy state, while the stomach, the lower part of the ileum, the colon and rectum, were affected

most severely, even to the destruction of the mucous surface, and thickening of the other parts of the intestine, the peritoneal coat only remaining sound.

In proceeding to examine a piece of intestine, it should be carefully cut open with a blunt-pointed pair of scissors; and after the exudation is observed, it should be washed in water, till the mucus is removed from its surface. On some occasions we shall see numerous dark-coloured, distinct points, somewhat depressed in the centre, which are the mucous follicles enlarged;\* in some places a number of these points will be seen to coalesce, sometimes in a circular space, but in general they are more of an oblong shape. The surface is elevated, and sometimes spongy; and upon making a section through this part, it will in general be found that the sub-mucous tissue is principally involved in the disease, and occasionally also the muscular tunic. On looking at the surface through a glass, ulcerations will be discovered. This appearance is most frequently observed in the lower part of the ileum and caput cæcum, in children who have died of bowel complaints.

Occasionally numerous distinct points will be observed, as if a pen full of red ink had been spattered over the surface of the mucous membrane; this I imagine to be produced by an exudation of blood from the follicles, which are also distended with it. It is also noticed by Billard, to whose work upon the diseased conditions of the mucous membrane the reader is referred for much useful information, as well as to the 1st and 2d vols. of Andral's Clinique.†

\* There is a preparation in my museum, showing the mucous follicles of the colon, so large that many of them would admit a large swan-shot. The colon is contracted. The patient died after a surgical operation.

† Since the publication of the first edition, M. Andral has favoured the profession with a work on pathology, which cannot fail greatly to advance the interests of medical science. The work is divided into two parts—the first part treats of general, the second of special pathological anatomy. There is perhaps no individual so well qualified to undertake such a laborious task as M. Andral. He is not only placed by universal consent at the head of the French Pathological School, but I believe had the scientific medical men of Great Britain been polled, they would, with one voice, have confirmed the choice of his own countrymen. Few have had such extensive opportunities of examining the physical changes produced by diseased action; and I believe still fewer are to be found who could give such graphic descriptions. He has conducted himself with great fairness towards his pathological opponents; and those who have followed similar pursuits, will agree with me that his delineations bear the stamp of truth. A faithful translation of this excellent work has lately appeared, the joint production of Drs. Townsend and West of Dublin. Those who are not familiar with the French language, may feel obliged to these gentlemen for putting such a work into their hands,—a work which, from the style in which it has been brought out, will not, I fear, remunerate the translators. It is worth a thousand volumes produced by a literary compiler, like Dr. Craigie, who has produced a heavy book scarcely readable without producing lethargy. Dr. Craigie is very learned as to what has been done in medicine, perhaps too learned; and there are many good things in his work, but he has, like many book-worms, endeavoured to controvert facts which practical men know to be correct, by theoretical reasonings; he has amused himself, without instructing others, by a species of “straw-splitting,” so common among his order; he has made distinctions without differences, and in fact has converted mole-hills into mountains. To say the very least of it, it looks very suspicious to see a review highly commendatory of his own work in the journal of which Dr. Craigie is editor, and another of as contrary a character of that of Andral's. Had Andral been a British writer, I would have left him to fight his own battle with the reviewer; but being a foreigner, I thought it desirable that the selfishness of one should not be thrown as a slur upon a whole nation.

On other occasions ulcerations are observed, of a circular or oval form, with defined margins, attended by loss of substance, not only of the mucous membrane and the sub-mucous tissue, but extending into the muscular coat, which may be seen in different places in a ragged state. In addition to this, the mucous membrane is sometimes excavated to a considerable extent. The ulceration often destroys the greater part of the muscular coat, so as to affect the peritoneum, which will then be found thickened and inflamed; the external surface being either covered with lymph, or looking like an excrescence of a dark red color. Occasionally, when ulceration attacks the mucous coat, the sub-mucous tissue and the muscular coat become infiltrated with lymph, producing a thickening of the rest of the intestine, as if it were intended to strengthen the part, and prevent rupture. When ulceration first attacks the muscular coat, it would appear that an effusion of lymph takes place in the outer cellular tissue, in which case it is difficult to separate the peritoneum from the muscular coat at the diseased part. Occasionally, indeed, the ulceration extends through all the tissues, allowing the escape of the contents of the bowels into the abdomen. Sometimes we observe distinct ulcerations on the mucous surface, inclining to the circular form, which are considerably elevated above the surrounding parts, resembling carbuncles, and having an appearance as if they were to throw off a slough. Upon making a section of the intestine through the centre of one of these ulcerations, the cellular substance, and a part of the mucous coat, will be observed to be much thickened, and occasionally of a dark brown color. Ulcerations are sometimes circular, at others oval; sometimes they run in lines, and on other occasions are observed to be irregular in shape. In size they vary from that of a millet-seed, to be so extensive as to occupy a larger space, sometimes the whole intestine. In general, ulcerations of the colon are more irregular in shape and size, than of any other part of the intestine. In some instances ulcerations are surrounded by indurated margins, in others the mucous membrane seems to be merely removed. Ulcerations in the small intestines are, for the most part, found in that portion of the tube most distant from the mesentery. In the colon they are sometimes seen to run in the course of the transverse bands, which are greatly thickened and indurated, while the mucous membrane may be partially or completely removed. Occasionally these ulcerations have a red appearance, or are tinged of a yellow or greenish color by the feces or bile, and are surrounded by a great number of red vessels; but in other instances, they present a blanched appearance; which last will be principally observed in cases where there has been a great discharge by stool. In many instances, the part of the intestine which has already run into ulceration will shew few or no red vessels, while other parts that are only advancing to that condition display intense arborescent vascularity.

Ulcerations produce contractions of the calibre of the whole tube; but this is rare, unless the whole mucous surface be involved in the disease. It is not exactly the ulceration which produces the contraction, but an effusion of lymph into the other coats and cellular tissues, causing considerable thickening. Oc



casionally we see the mucous membrane intensely red and thickened, partly from inflammation, and partly from infiltration; and in one or two places presenting a seared appearance, as if it had been touched by a red-hot iron; it looks somewhat puckered and very dark colored, and sometimes the neighboring part is slightly mottled, as if from white granulations; but this is a rare appearance, yet I have seen it on several occasions, and always in the stomach.

An œdematous condition of the sub-mucous tissue is occasionally the result of acute action in the mucous membrane; but it may be also found in cases of general or partial dropsy. When the mucous membrane is sound, the effusion is not to be regarded as the result of inflammation. An effusion of air is also occasionally found in the sub-mucous tissue; but whether the result of inflammation, or a *post-mortem* change, is not satisfactorily determined. Mortification of the mucous membrane is also an occasional result of acute inflammation. This presents itself to us under two forms; the one is generally observed in the stomach in cases of fever, and in the last stage of phthisis, in which the mucous membrane is removed over a great extent of surface, leaving the parts of a dark color; the other is observed in the intestine, and particularly about the cæcum and ascending colon, in which the mucous membrane is lying loose, and in shreds of a very dark color, and having the most offensive gangrenous odour.

Inflammation of the mucous membrane, more particularly of the colon and rectum, terminates in a general thickening of the membrane and the submucous tissue; and occasionally also the muscular coat is involved. The mucous surface is soft and spongy, sometimes abraded and very much discoloured; in some places of a bright red; in others of a dark mulberry colour; no distinct vessels can be seen, and the discolouration seems to be partly owing to infiltration of blood. This appearance is very apt to be confounded with mortification, and is principally observed in the most acute form of tropical dysentery; but I have had many opportunities of seeing it in this country, in cases which ran their course in from eight to fourteen days; and in some of these instances the intestine is more than the eighth of an inch in thickness.

In some cases I have seen the mucous membrane of the colon and rectum, together with the muscular coat and submucous tissue, simply in a state of hypertrophy, to a great extent, which appeared to me to be the result of former inflammatory action; many of the subjects had been in warm countries, and had suffered from dysentery.

It is well known that ulcerations, which are attended with considerable loss of substance, undergo the healing process; and for some time afterwards the parts so restored may be distinguished by an appearance of cicatrization, which pathologists are well acquainted with, and which is best observed in old cases of dysentery.

Sometimes we see tubercles in the mucous membrane itself, with more or less extensive ulceration; or the tubercles are found in the sub-mucous tissue, with ulcerations on the mucous surface, in various stages, and extending from

the tubercular elevations. These appearances are also principally seen in the colon in cases of phthisis.

There are, no doubt, many other appearances which are produced by inflammatory action in the mucous membrane ; but a minute description of all would require a separate treatise, and is not consistent with the plan of this work.

Competent judges may deem the above description very imperfect. I can only say it is drawn from nature, and it will afford me much pleasure to demonstrate its general correctness, by shewing preparations and drawings in my collection from which it is taken.

#### INFLAMMATION OF THE MUCOUS MEMBRANE OF THE STOMACH.

It is difficult to determine the meaning of most writers when they speak of gastritis. Some use this term to indicate inflammation of the peritoneal coat of the stomach, which is a rare disease ; others, the mucous. Inflammation of the peritoneal coat of the stomach has been already treated of in this work under the term peritonitis.

By gastritis, I mean to express an inflammation of the mucous membrane of the stomach, frequently involving the sub-mucous tissue, and occasionally the muscular coat. A great deal of obscurity also prevails in different works, from the use of the terms phlegmonous and erysipelatous, adhesive and erythematic, which I shall therefore be careful to avoid.

Inflammation of the mucous membrane of the stomach exists in various degrees of intensity, from the most acute to the slightest sub-acute form ; and it may also be chronic. Acute inflammation of the mucous membrane of the stomach is a rare disease ; it generally exists in a sub-acute, and a chronic form.

*Symptoms of gastritis.*—There is a burning pain in the region of the stomach, increased on pressure ; a constant desire for cold drinks, which are immediately vomited ; nausea, and inclination to retch, are incessant ; the heat over the surface of the epigastric region is considerable, while the extremities are perhaps cold. At the same time the patient frequently complains of sore throat ; and upon examination, the fauces will be found inflamed. Hiccup is a troublesome symptom. The state of the tongue cannot altogether be depended upon ; in general, however, it is very red at the tip, and round the edges ; loaded, and occasionally very rough in the centre, and towards the root ; sometimes, in long standing chronic inflammation, it is red, glazed, and smooth ; although I feel persuaded that this last condition of the tongue takes place more generally when the intestines are inflamed and ulcerated, than the stomach. The breathing is anxious and quick, and the patient restless ; the pulse is small, and the prostration of strength soon becomes very great ; the countenance is expressive of great anxiety, and the individual makes great complaint. Towards the termination of the disease, the features shrink, and the patient lies upon his back. The matter vomited in the early stages, consists of the fluids taken into the stomach, occasionally mixed with bile and some mucus ; but at last the black vomit takes place. The bowels are generally constipated.

There is scarcely any acute disease which so quickly exhausts the powers of life, and hence it is said that the symptomatic fever is of a typhoid type. It happens occasionally, however that the symptoms are exceedingly mild, even when the disease has been produced by mineral poisons; and appearances denoting great danger do not come on till within a few hours of the fatal termination. This was particularly well marked in a soldier of the 17th foot, who swallowed two drachms of the muriate of mercury, and who died unexpectedly eight or ten days afterwards on the close stool; having been able to get out of bed, and walk to it unsupported.

It has been already stated, that the acute form of this disease is a very rare occurrence, and that it more frequently exists in a sub-acute and chronic form; and we see these most frequently in fevers, in dyspepsia, and in the last stage of phthisis.

*Causes.*—This disease is produced by any of the common causes which occasion inflammation; by wounds and contusions, as well as by poisons and other acrid substances taken into the stomach, also too great indulgence in the use of ardent spirits; it sometimes follows in the train of other diseases, as cholera morbus, &c.

*Appearances on dissection.*—On opening the stomach, a considerable quantity of thick, tenacious mucus will be observed; and the mucous membrane itself will be found in one or other of the conditions already noticed in the general description. It may be mentioned, that the appearances produced by poisons so closely resemble the lesions occasioned by ordinary inflammation, that no distinction can be made; and the nature of the case must rest upon the fact of poison being found, and its powers ascertained.

*Treatment.*—Bleeding copiously and frequently must be had recourse to, and at short intervals; there is no disease which requires a more decided use of the lancet. The application of leeches in considerable numbers may also be found necessary, either after the inflammation has been somewhat subdued by the lancet, or when the physician is afraid that it is too late for general bleeding. Blisters are, of course, to be employed when in severe cases. Laxative medicines are also necessary; but it is needless to administer them till the diseased action is considerably subdued, as they will increase the already too irritable state of the stomach; therefore, in the first instance, we are to endeavor to open the bowels by means of injections. Opiates are also useful; but it is necessary to caution young practitioners against the routine practice which is too generally followed, of giving opium whenever there is irritability of the stomach. When opium is given, it is often advantageous to exhibit it in the form of pill combined with calomel. The warm bath, and hot fomentations to the part affected, are means which must not be neglected; and it is necessary to restore and support the natural heat of the extremities.

During convalescence, the diet must be carefully attended to, and should merely consist, for the first day or two, of arrow-root or fine oatmeal gruel.



## INFLAMMATION OF THE MUCOUS MEMBRANE OF THE BOWELS.

INFLAMMATION of the mucous membrane of the bowels varies perhaps more, in its external signs, than that of any other structure in the body, and for the most part its attack is most insidious. The disease is most frequently met with in a sub-acute and chronic form; even when acute, the symptoms are sometimes exceedingly mild; and this takes place occasionally in cases where we subsequently find, on dissection, not only the most extensive inflammations, but ulceration; which will be more fully shewn when treating of dysentery.

*Symptoms.*—The combination of symptoms denominated fever, take place with more or less intensity; in fact, as already shewn, inflammation of this tissue is the cause of many of the fevers which prevail in all climates. Pain is often very slightly felt, in comparison with that which generally attends peritonitis; when the small intestines are affected, the pain is experienced more about the umbilicus than in any other region; cold drinks aggravate it, as well as any indigestible substance taken into the stomach. The pulse is found in very different states even during the same day; it is frequently quick, but not in general so hard as in peritonitis. The skin is generally hot and parched during the day and night, but towards morning some degree of moisture takes place, and it is then only the patient enjoys comfortable sleep. Thirst is often very urgent.

Tympanitic distention often causes considerable suffering to the patient, and aggravates the constitutional symptoms. The tongue is not altogether a sure index of the state of the mucous membrane, as I have seen it perfectly clean and natural in colour, or foul without redness, when dissection revealed most extensive inflammation. But in general, the tongue will be found to be more or less red at the tip, and round the edges, however much it may be loaded in the centre; sometimes it is altogether red, and looks raw, and perfectly smooth like varnished leather; and when it is unusually red, I look upon it as a certain indication of very considerable irritation, or of some degree of inflammation or ulceration of the mucous membrane of the bowels. When the superior parts of the tube are diseased, there is more or less nausea and tendency to vomit; when the inferior parts are implicated, we find pain in the iliac regions, and in the course of the colon, with more or less diarrhœa, and considerable discharges of flatus; and when the colon is severely affected, there is that twisting pain in the bowels, which in medical language is denominated “*tormina*,” it comes on in paroxysms, with intervals of perfect ease. The patient complains of it every hour, or half hour, and even at shorter intervals, and it is always followed by an irresistable desire to go to stool. When the rectum is involved, there is considerable straining, and the patient can scarcely be induced to leave the close stool, and yet he passes nothing but a little mucus mixed with blood, or a small quantity of scybalous matter, with some flatus.

Every experienced medical man, upon reading these passages, will perceive that I have been describing the symptoms of diarrhœa and dysentery; but my wish at present is to describe inflammation of the mucous membrane of the

intestines generally, as the peculiar nature of the discharges by stool, which constitute diarrhœa and dysentery, do not always attend inflammation of that membrane.

Women after delivery are sometimes seized with this affection; and some imagine, that when peritonitis takes place in that condition of the system, it is always owing to the extension of the inflammation from the mucous tissue. But although sometimes the case, this cannot be assented to as a general rule. An instance of pure inflammation of the mucous membrane of the small intestines lately occurred to a woman, after an abortion at the fourth month, which resisted the most active practice, and terminated fatally. On dissection, traces of active inflammation of the whole membrane were discovered, which several days maceration in water did not destroy; and a portion of it, which is put up in spirits in my museum, still retains its red colour. There were also a great number of abrasions, which, had the woman lived a few days longer, would have been converted into deep and extensive ulcerations. Another fatal case occurred in the practice of a friend, after delivery at the full period. In this lady, the disease was apparently produced by a large quantity of grapes she had eaten with the skins and stones, which were found in different parts of the intestinal canal. But in neither of these cases did the peritoneum suffer.

*Treatment.*—If the disease be very acute, the lancet must be used, but the cases which usually fall under our notice, will yield readily after the application of a dozen or eighteen leeches to the abdomen, together with the warm bath, fomentations, and the gentlest laxatives. If there be much tympanitic distention, injections with a small quantity of turpentine, or with an infusion of tobacco, will be found very serviceable. Opiates are useful, and the best preparation perhaps, in such circumstances, is the Dover's powder. We shall seldom be obliged to apply blisters, except in very acute cases; but the disease is often mitigated by the application of hot oil of turpentine, or a mustard poultice, which is to be removed in a short time, so as not to occasion vesication. Attention must be paid also to diet and clothing, particularly during convalescence.

*Chronic inflammation of the mucous membrane.*—I have frequent occasion to see cases of long standing inflammation of this tissue. They will be often found connected with some cutaneous eruption, as lepra, psoriasis, &c. or with ulcers on the extremities. It will be observed, that the patients enjoy best health when the eruptions are most severe, or the ulcers most troublesome, and attended with copious discharge. These circumstances were first forced upon my attention, upwards of twenty years ago, in a warm climate, and subsequent observations have tended to confirm them.

This pathology would seem to demand a different treatment from that generally pursued in diseases of the skin, as well as in many ulcers on the extremities, and will shew surgeons the propriety of attending to medical pathology, so as to enable them to treat even a common ulcer. I do not mean to assert that all ulcers are produced by this cause, but that many are so, I have no doubt;

and it is necessary to point out the circumstances which will enable a young practitioner to distinguish them. When a person affected with an ulcer, says that he feels in better health when the ulcer is open than when it is healed, we may suspect that there is some internal disease ; but when we likewise find his skin harsh, his thirst increased, the appetite impaired, or fastidious, together with some degree of nausea ; if there be uneasiness, fulness and oppression in the abdomen, increased after taking a cold drink, or after meals ; if he be alternately affected with constipation and diarrhœa, the evacuations being fetid and discoloured ; if the tongue be loaded, and of a red colour at the tip and round the edges, or universally red, or loaded, but covered with large and elevated papillæ at the root : if any of these symptoms exist, even in a slight degree, along with the ulcer, or become increased after it is healed, we may rely upon it, that the mucous membrane of some part of the intestinal tube is affected.

*Treatment.*—In the cases I have described, whether attended by ulcerations or eruptions, I have sometimes seen the most striking benefit from general bleeding ; but this is not often necessary, unless the eruption be attended with much inflammation of the skin. In general, leeches applied every second or third day about the umbilicus, and repeated for some time, together with the general warm bath, gentle laxatives, a bland dry diet, never allowing the patient to eat a large quantity at a meal, will be productive of great benefit. Subsequently counter-irritation, produced by the tartrate of antimony ointment, is to be used ; but I shall speak more fully upon the subject, in the 2d volume, when treating of cutaneous diseases.

## DIARRHŒA.

A person who has frequent liquid stools, is said to have a diarrhœa, which may exist with or without fever. The evacuations are almost always fetid, discoloured, watery, or somewhat slimy, containing more or less feculent matter ; and sometimes, on examining a watery or a slimy stool, small, round, and hard masses of feces. may be found. Diarrhœa may also be attended with thirst ; griping pains in the belly, which become relieved for a short time after an evacuation ; and there is frequently tenesmus.

*Pathology.*—Diarrhœa is to be looked upon as a mere symptom instead of a disease, in which light it is too frequently regarded. The disease is some irritation or inflammation of the mucous membrane of the bowels, produced by fright, the application of cold, unwholesome, and indigestible food, diseased biliary secretion, constipation. These are the principal causes ; so that we may have diarrhœa with and without inflammation. When there is inflammation, the constitutional symptoms are pretty well marked by the heat of the surface, and state of the pulse, particularly during the night.

*Treatment.*—From the short pathological description given above, it will be seen that the treatment must be considerably modified. If the affection be produced by the application of cold to the surface, the warm bath, a dose of Do-



ver's powder, and subsequent attention to clothing, and particularly preserving the heat of the extremities, will be all that is required. If by unwholesome food, it must be avoided for the future; gentle laxatives must be given, to hurry the passage of the offending matter through the bowels, followed by an opiate. If by diseased biliary secretion, which is to be recognized by the existence of nausea, or even vomiting of considerable quantities of bile, together with the passage of bilious stools, which perhaps will produce a pungent sensation in the rectum, and considerable tenesmus,—a little calomel and opium may be prescribed, followed by small doses of Epsom, or any other salts, largely diluted in water, together with copious drinks of gruel, or barley water, or any other bland diluent. If from constipation, which can only be recognized by examining the stools, that state must be removed by gentle laxatives, frequently repeated, conjoined with opium or hyosciamus, and assisted by unstimulating injections. In this case, the warm bath is also serviceable; and after the bowels are fairly cleared of the hardened feces, the irritation is to be subdued by an opiate. If in any of these cases there should be considerable pain in the belly, with fever and a hard pulse, bleeding may do good, and can rarely do harm. But should diarrhœa depend on inflammation of the mucous membrane, or should inflammation supervene during the progress of the disease, bleeding, either general or topical, ought to be employed, if the means above recommended do not succeed. Cases have occurred to me, where nothing else was necessary after abstracting blood from the arm, but which had previously resisted all the ordinary remedies for many days. If, notwithstanding the employment of these means, the patient be not relieved, or if he be so weak as to make us anxious to save blood, an injection of tobacco may be perhaps substituted. Opiates, attention to the diet and counter-irritation, must be had recourse to. If in any case there be much tenesmus, a tea-spoonful of laudanum, mixed in an ounce or two of gruel, is to be thrown into the rectum.

It would appear that Hume, the celebrated historian, died from ulceration of the bowels, which was not recognized by his physicians.\*

#### BOWEL COMPLAINTS OF CHILDREN.

THE pathological observations already made in the last sections apply to the bowel complaints of children. In the course of practice, it is distressing to see so many children carried to the grave from a diseased condition of the alimentary canal; although there is no class of complaints, which, when taken early, and treated according to good pathological principles, are more under control. They frequently terminate by producing marasmus, and the complaint which I have presently to notice, under the name *tabes mesenterica*.

Much mischief is occasioned by the method too generally adopted immediately after birth. A child is scarcely dressed, when a tea-spoonful of castor oil is wantonly forced down the throat; or a great deal of sugar and water is given,

\* The account of his symptoms and feelings, in his own words, is very interesting.—*Vide History of England*, vol. i. Introduction, p. xix.

for the unnecessary purpose of purging away the dark matter which collects in the large intestines during the last two or three months of its uterine life. We ought to be in no hurry in producing the expulsion of this matter, as if it were a poison, the retention of which will carry death into the very vitals. We frequently see fatal bowel complaints produced by this cause, and it is no uncommon thing to discover that drastic purgatives have been employed. Not long ago, I was called to see a child under a fortnight old, who was taking half a grain of calomel and two of scammony twice a-day, although it had from fifteen to twenty stools during the course of twenty-four hours, notwithstanding the exhibition of occasional doses of chalk mixture. In such cases, the drastic purgatives are given in the first instance to "clear out the bowels," and afterwards persevered in "to improve the evacuations."

Another cause of the bowel complaints of children, proceeds from the absurdities constantly committed with respect to their food. Soon after the castor oil has been exhibited, the nurse insists upon giving food, consisting of thick gruel, which the stomach is totally incapable of digesting; flatulency is the consequence; they cry; and then the nurse flies to Dalby's carminative for relief, which produces ease for a time, but by inducing constipation, renders another dose of castor oil necessary; this in its turn frequently gripes. This the nurse attributes to wind in the stomach and bowels, and again thick indigestible food is given, to drive out the wind, which in its turn again requires the Dalby. In this manner, the functions of the stomach and bowels are too often impeded and not only impeded for the time, but the children are rendered ever afterwards liable to complaints in the stomach and bowels.

Daily do I see the advantage of pursuing an opposite plan with new-born children. I allow no laxative medicine to be given, unless an infant suffers from distention of the abdomen, which is to be ascertained by examination. Should this be the case, the old plan of using a suppository, or a twisted piece of paper, will in general answer every purpose; but if it should not, then a laxative may be given by the mouth, and the best is a solution of manna. With respect to food, an infant ought not to have any thing of greater consistence than well-made whey, or milk and water, till it can procure food from its own natural fountain.

Some children are so constituted, that do what we will, they have more than the natural number of stools, and yet they go on growing and thriving in a remarkable manner; in such cases little or nothing ought to be done, because there is good evidence that there can be no serious disease. Again, some children are naturally constipated, and yet they thrive; in such cases, also, much interference is unjustifiable, beyond changing the milk, or exhibiting a little manna. A healthy child at the breast, ought in general to soil from four to six napkins in the course of twenty-four hours; the evacuations after the first fortnight should look like well-made mustard, with perhaps white specks here and there; it should have a sour smell, and possess no fetor. The stools, however, are sometimes green and watery; sometimes yellow and watery; some-

times brown and frothy, or white and frothy, as if mixed with yeast; and also whitish and hard, like half-baked clay; occasionally blueish, and very often mixed with slime, or are altogether slimy. When the stools are blueish, and particularly when whitish, like half-baked clay, they are very adhesive, and expelled from the gut with difficulty. Instead of having the natural sour smell, they are like the stool of an adult; or they may have a still worse smell, sometimes compared to rotten eggs, at others to train oil; and occasionally even still worse, like that which emanates from a gangrenous sore. Green and brown stools are generally watery, or mixed with mucus, and are occasionally discharged, when the child is held out, as if they came with violence from a squirt, and are often preceded by considerable signs of suffering.

The blueish and the whitish stools are generally few in number, but are attended with consequences fully as dangerous to the infant, as they terminate by producing diarrhœa of the most intractable nature. In many of these cases, the diarrhœa alternates with constipation; and occasionally there is so much irritation in the rectum, that prolapsus ani takes place, attended with great suffering.

Many children go on thriving remarkably well, having a regular state of bowels till they are weaned, when, from the sudden change of food, a serious disturbance is occasioned in the stomach and bowels, announced by vomiting and purging, or by purging alone, the stools consisting at first of feculent matter, then mixed with mucus, and perhaps tinged with blood; and subsequently of a white and serous fluid, like dirty water, which is discharged suddenly, and squirted with violence from the bowels. Children so affected are said to have the weaning 'brash, which has a very close resemblance to a complaint soon to be described, called cholera, and sometimes cholera morbus.

*Treatment.*—If the disease be produced by the injudicious use of laxatives, these are to be discontinued or diminished in quantity, and conjoined with a slight opiate, as, for instance, a quarter or a half a drop of laudanum in a tea spoonful of a solution of manna. If from indigestible food, it is to be withdrawn, and the child must subsist entirely upon the breast. If there be good evidence of its own milk disagreeing with it, another nurse should if possible be procured. Green stools are often occasioned by the exhibition of calomel, which is too frequently very carelessly prescribed by nurses themselves. The yellow watery stool, and the brown watery stool, often announce an excess of bile; while the blueish and whitish stools, but particularly the latter, indicate a diminished quantity of bile. In the former cases, a little thin arrow-root, one small dose of calomel, followed by a little castor oil, and an occasional tea-spoonful of chalk mixture, together with the warm bath, will be all that is required. But in the latter cases, five or six half grain doses of calomel, given either at night or in the morning, followed by an occasional small quantity of castor oil, and attention to the diet, will be sufficient to put the child in a fair way. According to my experience, the calomel is particularly necessary when the stools have the peculiar disagreeable odours formerly described. If



much mucus be discharged, particularly if tinged with blood, and expelled as if it came from a squirt; if there are fever, restlessness, peevishness, and thirst, and particularly if the child cries much and emaciates, medical men should be upon their guard, for if inflammation of the mucous membrane do not already exist, there are evidences of its being threatened. Solid food should be carefully avoided; and if the child be already weaned, it should be offered nothing but whey or ass' milk. The warm bath is to be used morning and evening; and I have found powders composed of calomel, aromatic powder, and Dover's powder, with or without rhubarb, proportioned to the age of the patient, highly useful. To a child of three months old, I would give half a grain of calomel, the same quantity of Dover's powder, and two or three of the aromatic powder, every three, four, or six hours; to a child under that age, a somewhat smaller quantity of the Dover's powder may be given, and it should be increased to those who are older. If the feverish symptoms still continue, I either apply a leech, or rub a stimulating embrocation upon the abdomen; but it is always safe practice to apply a leech early, which is not only justified, but loudly demanded, by the appearances on dissection, when the mucous membrane is seen, not only in a high state of inflammation, but also of ulceration. My museum contains many specimens of such morbid changes.

Sometimes we are not consulted till the little sufferer is greatly reduced, and it should be remembered that its vital powers may sink early, from the peculiar severity of the disease. In such cases, we must be guided by the expression and colour of the face, state of the pulse, and the temperature of the body. If the expression be subdued, the face pale, the features sharpened, the extremities and tip of the nose cold, and the pulse weak, a stimulant is instantly to be given, and the best one is brandy and water, proportioned to the age of the child; it may be necessary to conjoin an opiate with the stimulant. The warm bath is also to be had recourse to.

TABES MESENTERICA.

THIS is a disease in which there is great emaciation and enlargement of the abdomen.

After the bowels have been for some time in an irregular state, the child is observed to fall off very much in strength; the extremities and the face becoming much emaciated, while the belly is observed to be tumid; the appetite is fastidious, sometimes ravenous; there is great thirst, and frequently griping pains. A child so affected has some degree of fever, while another has no feverish symptoms; but most commonly there is a ferbrile attack during the night, which goes off towards morning with perspiration. The abdomen feels doughy and knotty, at other times tense and tympanitic. At first the tumefaction is owing to flatus; but as the disease goes on, effusion takes place into the cavity of the abdomen; there is constant purging, till at last the child dies exhausted, or is carried off by disease in some other part; commonly of the brain or lungs.

*Appearances on dissection.*—On dissection we sometimes discover chronic peritonitis, with enlargement of the mesenteric glands; but more frequently ulcerations of the mucous membrane of the bowels, the effect of long-continued sub-acute, or chronic inflammation. The whole of the internal surface of the colon is sometimes ragged; the rest of the coats of that intestine being, in general, very much thickened: at other times, the lower parts of the ileum and cæcum are affected; and occasionally ulcerations are seen in the jejunum, increasing in number, however, in the course of the ileum. Occasionally, when there is chronic peritonitis, I have been able to trace it to the extension of the ulceration from the other coats of the intestine.

*Treatment.*—The pathology of this disease appears not to be understood by the generality of practitioners. It is too often attributed to scrofula, merely because the mesenteric glands are known to be enlarged; therefore the muriate of lime is extensively employed by those who are *calcined* in old prejudices, and who are blessed with so much patience, that three years is not considered too long a period to wait for its good effects. The disease should be treated as one proceeding from inflammation and ulceration of the mucous membrane of the bowels, which will also be the best practice, should the disease depend on chronic inflammation of the peritoneum.

#### DYSENTERY.

THIS affection is known also by the name of flux; when attended with a discharge of blood, bloody flux.

I shall treat of dysentery under two heads,—acute and chronic.

*Symptoms of acute dysentery.*—It commences like a common diarrhœa, with griping pains in the bowels; frequent calls to stool, with an irresistible desire to strain over it; the evacuations are sometimes fluid and copious, with the usual fetor; at others scanty; and whether copious or scanty, there is occasionally seen, particularly in this country, some hard scybalous matter, with mucus, sometimes streaked with blood, and very fetid. In warm climates it is rare to see scybalæ; when there is feculent matter, it is very watery. After a stool, the patient feels more or less relieved, but soon another paroxysm of pain frequently amounting to what has been denominated “tormina,” takes place, and he may have a great many such attacks during twenty-four hours. In this country, for the first few days, the heat of skin is not much increased, neither is the pulse accelerated; the tongue is loaded, and generally red at the tip; the thirst is urgent; there is loss of appetite considerable prostration of strength; and depression of spirits.

After the lapse of two or three days, more or less, the patient complains of fixed pain in the hypogastrium, and in one or both iliac regions, which sometimes becomes very distressing; it is increased by pressure, and I have been able to trace it, on many occasions, all along the track of the colon. Sometimes there is universal heat of skin; at others, the abdomen only will feel burning to the hand, while the rest of the body is cool; nay, the extremities

may be ice cold, and the patient may complain of frequent rigors. The evacuations from the bowels, at first feculent and copious, now become more frequent and scanty, consisting entirely of mucus, or of mucus mixed with blood; or they may still be watery, and of a dark brown color, with portions of slime here and there; or they may have the appearance of dirty water slightly tinged with blood, with now and then a little scybalæ. The stools become more and more disagreeable in odour, till at length an experienced person will be able to recognize the smell to be dysenteric upon first entering the room. The tenesmus is more distressing, together with a cramp-like feel in the thighs and legs, which is relieved after each evacuation; it is with difficulty that the patient can be persuaded to leave the close-stool and to lie down in bed. The secretion of urine is frequently suppressed, and the patient suffers a good deal of pain from that cause. Thirst increases; cold water is preferred, from which the patient cannot refrain, although he knows it is bad for him. The tongue is more loaded and florid; or it has by this time become dry and glazed. The skin is either parched or covered with copious perspiration, which, in the worst cases, does not appear to mitigate the symptoms, although some relief is experienced in slighter instances. When the skin is universally hot and parched, the pulse in general will be found quick, full, and bounding, but when the extremities are cold, it will perhaps feel weak and thready; yet, in some instances, the pulse is not much changed from its natural state, neither are the other symptoms troublesome, till within twenty-four-hours of death.

Sometimes the patient preserves some degree of appetite for a few days; but in the course of two or three hours the articles of food are passed by stool in an undigested state. The patient emaciates quickly; the despondency increases; and as the disease advances, his bodily weakness increases, till at length he is unable to obey the frequent calls to go to the close-stool. He lies upon his back, unable to move, and at length passes his stools involuntarily, which appear as if mixed with shreds of membrane, and occasionally they resemble pease soup, and sometime are even like pure pus; or they still continue to consist of mucus, more or less tinged: the bowel is constantly in a state of protrusion, and the fetor which emanates from the patient is almost intolerable. In warm climates, I have seen an appearance as if large portions of the mucous membrane had been thrown off in a state of mortification, and I knew one patient recover after such an event. Dr. Ballingall and others mention the same circumstance as having occurred in their practice; but recovery in this stage is almost out of the question. The pulse sinks; the pain ceases; and the mind, which perhaps has hitherto been quite clear, now becomes disturbed; a cold clammy sweat takes place, and death shortly closes the scene. Hiccup and vomiting are occasional symptoms; and during the progress of the disease, the symptoms frequently undergo remarkable remissions, which excite hopes of recovery. I have seen the strongest men destroyed by this form of the disease in four days; but in general the case is protracted for two or three weeks.



*Symptoms of chronic dysentery.*—This form is rarely met with in this country, unless in individuals who have come from warm countries, where they had suffered frequent attacks of the disease. In chronic dysentery, patients are affected with severe fits of griping about the umbilicus, like colic, which are quickly followed by an irresistible desire to go to stool, when a great deal of flatus is discharged, along with an evacuation which is sometimes of a dirty brown feculent matter, sometimes even much darker in colour; at others it is greenish or yellowish; and occasionally the stool looks yeasty, or resembles thin gruel; sometimes, according to Mr. Marshall, like rice water, or water in which a small porportion of white clay had been diffused. Sometimes there is only a sense of weight in the abdomen, and very often acute pain is perceived, upon pressure, in the course of the colon, but more particularly in the situation of the caput cœcum. After each paroxysm of pain, and subsequent stool, the patient enjoys a longer or a shorter interval of ease, unless he be scalded about the anus. The skin becomes parched, and the pulse quickened; the appetite is impaired in some cases, while it remains good in others; but the patient will be observed to be worse after a moderately full meal, and occasionally there is nausea. Thirst is a pretty constant companion. The tongue presents various appearances, sometimes loaded, the fur being of a yellow color: at others it is loaded in the centre, and redish at the tip; sometimes rough, and often it has the appearance which has been already described in this work, red, raw-looking, and quite smooth as if glazed. After these symptoms have continued from two or three to twelve or fourteen days, the stools are found to consist of whitish mucus, frequently mixed with undigested food, and are almost always passed with considerable straining; the tormina increase; borborygmus is troublesome; the patient loathes food more and more; nausea is more complained of, and bilious vomiting occasionally takes place; thirst increases, as well as debility and emaciation; hiccup is often very troublesome; and the pulse becomes quicker and quicker, gradually losing its strength, and the skin looks sallow; at last death takes place. In the latter stages, the abdomen sometimes becomes more tumid; at others, it is flatter than usual. Occasionally acute peritonitis cuts off the patient, from the escape of the contents of the bowels into the abdomen through an ulcerated opening.

*Appearances on dissection, with pathological remarks.*—In this country dysentery is rarely fatal, unless it attacks individuals who have suffered severely from the same complaint in India. Nevertheless, my museum contains sufficient proof that it is sometimes fatal, and that the *post-mortem* appearances closely resemble those which are found in tropical climates. I have known several fatal cases in Edinburgh, which ran their course in from nine to twenty days, and in which the colon, the rectum, and part of the ileum, were in a state of complete mortification, the parts having the gangrenous fetor. In other instances, the colon and rectum, throughout their whole extent, were thickened and contracted; the mucous membrane being soft and spongy, and dark coloured, looking more like a livid fungous excrescence than an ulcerated surface;

the colour being retained even after maceration. An opinion has been too prevalent, that dysentery is always connected with a vitiated state of the bile, or actual disease of the liver itself; but the writings of modern pathologists have dispelled such delusions.

Dr. Ballingall, in proceeding to give an account of the appearances found on dissection, in his excellent work on fever, dysentery, &c., states, that in a great proportion of cases these appearances consist of an inflammation of that part of the intestinal tube situated below the valve of the colon, "without the smallest trace of disease in the structure of the liver."

The following are the appearances described by Mr. Marshall, deputy inspector general of hospitals, in his valuable work entitled, "Notes on the Medical Topography," &c. &c. I have great satisfaction in quoting from this author, because I know his descriptions were drawn from nature when standing at the dissecting table, with the morbid parts before him, and not copied from books:—Upon examining the bodies of Europeans who had died of dysentery, (says he,) the extent of structural derangement discovered is often very great."

"*Omentum.* This organ is sometimes found greatly diminished; more frequently it is found much thickened, interspersed with numerous vessels, turgid with dark-coloured blood, and easily torn. Sometimes it adheres with great firmness to the intestines, occasionally stopping up ulcers. Perhaps it adheres more frequently to the cæcum than to any other portion of the intestinal tube.

"*Intestines.*—The folds of the intestines are often found agglutinated together. Sometimes they adhere to the liver, and occasionally to the bladder. The colon appears studded or streaked with dark red or plum-coloured spots. Sometimes the contents of the intestinal tube are found in the cavity of the abdomen, having passed through a gangrenous orifice in the coats. When handled, the large intestines feel thick, heavy, and lumpy; they are likewise, in many instances, easily torn.

"Upon removing the intestines from the body, and slitting them up through the whole extent, a great number of lumbrici are commonly found; but as worms exist so generally in the intestines of Europeans in this country, their appearance cannot be considered as connected with dysentery. The inner surface of the duodenum is found covered with a viscid, glairy, semi-fluid substance, which has sometimes a yellowish, sometimes a greenish colour. Towards the inferior half of the ileum, small quantities of fecal matter are occasionally found, having a bright yellow colour, and some degree of consistence. The contents of this intestine frequently resemble the healthy alvine evacuations of young children. The colour and consistence of the fecal contents of the ileum are suddenly changed immediately upon passing into the cæcum. Nothing is ever found in the large intestines but a brownish offensive fluid, similar in appearance to the watery dejections which mark the last stage of dysentery. The intestines were never found to contain either scybæ or fecal accumulation.

"The coats of the small intestines are generally healthy; sometimes they are

redder externally than natural; this redness appears to originate from venous effusion, rather than from an actively excited state of the vascular system.

“The mesocolon is frequently found much thickened, and containing a great number of vessels gorged with blood.

“The chief traces of disease are found in the large intestines. The villous coat of the cæcum, colon, and rectum, when expanded, sometimes appears dark red, and extremely turgid; the turgescence is occasionally so great, as to resemble the tumid state of the inflamed conjunctiva during a violent degree of purulent ophthalmia.

“Sometimes the villous coat appears, at a little distance, to be covered with a blueish puriform fluid, and thickly interspersed with dark grumous spots and patches. When more narrowly examined, the villous coat is found to owe the appearance of being covered with puriform matter to an extravasation of fluids into the substance of it, by which means it acquires a swollen and pulpy appearance. The dark red grumous patches are portions of the villous coat in a gangrenous state. These spots are generally surrounded by a red circle, the areas of which are various; frequently they are not more than about a third of an inch. Sometimes an individual slough may be compared to a tainted oyster. The mortified portion of the villous coat that is situated within the red circle is easily removed from the muscular coat, which is commonly found apparently not changed from a state of health. In some instances, the central portion of the slough had disappeared, leaving an excavation in the villous coat, as if a portion of it had been cut out. Even in these cases, the muscular coat was commonly sound. The villous coat was generally unattached at the margin of the excavation, and the finger could often be easily pushed under it from one depression to another. Sometimes, however, the sloughing extended into the muscular coat, and even into the peritoneal coat, which was rendered evident externally by the mulberry-coloured patches. The dark spots on the peritoneal coat are always much less extensive than the corresponding gangrenous portions of the mucous membrane. While one part of the large intestines has lost its natural tenacity from gangrene, another has sometimes acquired an increased power of resistance, and when cut into, conveys a semi-cartilaginous feeling to the hand. Sometimes large portions of the villous coat are found sphacelated without any intervening living parts. In these instances, it is extensively separated from the muscular coat, and is sometimes found loose in the cavity of the intestine. The gangrenous shreds occasionally stretch across the diameter of the intestine, like a bow-string. The separated portions of the villous coat are torn by the slightest force. They resemble, in appearance, pieces of dirty lint imbued with the ichorous discharge of a gangrenous ulcer.

“Sometimes small collections of purulent matter are found between the villous and the muscular coats. This is, however, not a frequent occurrence.

“Occasionally dysentery leaves traces of disease in the large intestines of a different kind, namely, tubercular ulceration. Ulcers of this character are not unfrequently found spread over portions of the villous coat, and, for the most part,



in a remarkably distinct and uniform manner. That portion of the villous coat which intervenes between the ulcers, has in general, a loose, pulpy appearance. Sometimes it is turgid and reddish. Viewed at a little distance, the inner surface of the intestine appears to be sprinkled with a soft, curdy-like substance. These cream-coloured specks are of various sizes; sometimes they are not more than a line, at other times they are an inch in diameter. Upon examining a small speck, the whitish substance is found to protrude a little beyond the surface of the intestine, and adhering, but not very firmly, to the villous coat. After removing this substance, a depression or incipient ulceration is exposed. The base and margin of the indentation are generally dark red. The depression eventually increases, and becomes an ulcer, which is always encircled by a red portion of the villous coat. Sometimes the ulcers resemble the ill-conditioned sores, with prominent edges, which occasionally occur on the inside of the lips, particularly during a severe course of mercury. In general, the base and edges of the ulcers are indurated, unequal, and scabrous. When a transverse section is made, a gristly feeling is communicated to the hand. The tubercular appearance of these ulcers is very remarkable. They sometimes resemble warty elevations with excavated apices, in a state of ulceration. For the most part, ulcers of this kind are oblong: in length, they extend from half an inch to an inch; the breadth is seldom above half the length. The longest diameter is always in a transverse direction to the cavity of the intestine.

“Such are the more common traces of disease found upon inspecting the bodies of individuals who have died of dysentery, more particularly among Europeans. Death rarely, if ever, occurs among this class of people before a certain degree of gangrene of the villous coat of the large intestines has taken place.

“Abscesses and other morbid states of the liver are occasionally concomitants of dysentery. When traces of disease in the liver were discovered on dissection, the circumstance is noted on the table of casualties. The nature of the structural changes of this organ has been already mentioned. Upon examining the bodies of Malays that have died from dysentery, traces of disease of a less active character are discovered. The mesentery and meso-colon are generally found massy and dark-coloured, from turgid blood-vessels and the lymphatic glands greatly enlarged. The coats of the large intestine are thickened and firm; frequently the calibre of the intestine is greatly contracted. The villous coat is, in these cases, unequal, puckered, and covered with a gelatinous muco-purulent substance. Occasionally, however, instances occur where the inner surface of the colon is found sprinkled with grumous spots in a state of mortification, and sometimes the sloughing portions are extensive.”

Some years ago dysentery was very prevalent and fatal in Ireland, which afforded Dr. Cheyne and others the most extensive opportunities of making *post-mortem* examinations. They had the best proof that the primary and chief seat of the disease was in the mucous membrane of the intestines; the liver was

sound in a majority of cases, but often otherwise. In two instances abscesses were found, and in many others great sanguineous congestion.

According to Dr. Cheyne, the intestines were variously affected; in some cases they were prodigiously distended; the small intestines measuring from seven to nine inches in circumference; in some the coats were much injured without thickening; in others considerably thickened as well as ulcerated. In some cases the inflammation of the mucous membrane was most extensive, extending from the stomach to the rectum; the inflammation being always greatest towards the large intestines, the rectum being, however, sometimes sound.

The morbid appearances discovered in the intestines in fatal cases of dysentery in this country, are considerable thickening of the large intestines; sometimes this thickening affects the whole colon and rectum; sometimes it is confined to the caput cæcum and part of the ascending colon, at others it involves also the arch, and even extends further. The peritoneal coat generally remains sound. The seat of the thickening is in the mucous coat and sub-mucous cellular tissue, which are infiltrated with blood, spongy with a rough and ragged surface. The colour varies from bright red, to a dark brown.

On other occasions the mucous surface is spongy, rough, and ragged, with deep ulcerations here and there; the ulceration running principally in the course of the transverse bands of the colon. The colour is sometimes very little changed, and there is little or no infiltration of blood into any of the tissues.

I have likewise seen complete mortification and sloughing of the mucous membrane in two dissections. In these instances, there were large detached portions of the membrane, the sloughing condition being sufficiently well marked by the colour and fætor. The rectum has been implicated in a variety of the cases that have fallen under my observation, but it escapes more frequently in this country than in warm climates. There are some specimens and drawings in my museum, from which this description has been taken.

*Causes.*—Dysentery is a disease which attacks individuals of all ages and all classes of society; although those are more liable to it who are most exposed to vicissitudes of climate, and who are badly fed and clothed. Irregular habits also predispose to this disease. In warm climates it is found that Europeans suffer more than natives. Upon inspecting Mr. Marshall's tables, it will be seen that the disease is fatal during every month in the year; therefore it must occur in all kinds of weather. It is more peculiarly a disease of tropical climates; although we often see it in other situations, yet it is neither so prevalent nor so fatal. It also seems to depend upon the same exciting causes as fever. Although diseased secretion of bile may occasionally produce both diarrhœa and dysentery, yet these diseases ought not to be so invariably imputed to this cause.

*Treatment.*—The method of treatment which is generally found necessary in this country, shall be first shortly stated; and then that which ought to be adopted in warm climates in the acute and chronic form of the disease.

*1st, Treatment of dysentery as it occurs in this country.*—The same plan is to be pursued as in severe cases of diarrhœa. The body is to be warmed in a hot bath; and as we are anxious to get rid of any offensive matter that may be in the bowels, in the first instance, an ounce or half an ounce of castor-oil is to be given, with twenty, thirty, or forty drops of the sedative solution of opium; but if the stomach be too irritable to bear the castor-oil, calomel with a small quantity opium, is to be given in pills every second, third, or fourth hour, till a feculent evacuation is procured, assisted by a large injection of warm milk and water, or thin gruel; or small doses of salts may be given by the mouth, and repeated at short intervals. It is wrong to suppose, that in all instances of dysentery in this country, there are hardened feces lodged in the bowels; but as this is sometimes the case, and certainly more frequently than in warm climates, the plan above recommended should in the first instance be adopted. This points out the necessity of a careful examination of the alvine evacuations, which has been already so much insisted upon in other diseases.

If, however, a patient have considerable griping and tenesmus, hot skin, and a quick pulse, although it may not be particularly strong, it will be right to bleed him, especially if there be pain on pressure; and perhaps it will be safest to draw blood before the laxatives are administered. One good bleeding will in general suffice; if there be much subsequent tenderness of abdomen, leeches may be had recourse to. After the diseased action has been thus reduced, and the scybalous matter got rid of, we may have recourse to large opiates by injection. It appears to me that the reason why opiates are not attended with more success, is that they are exhibited in too small quantity, and that they do not proportion the dose, in any degree, to the violence of the symptoms. If we suspect the liver to be disordered, small doses of calomel or blue pill may be given, but there is no necessity for greatly affecting the mouth.

Counter-irritation to the abdomen is to be had recourse to, and the best method of producing it, is by the frequent application of hot oil of turpentine; but should the disease be very severe, it will be adviseable to apply a blister. The attendants should be particularly cautioned to watch the heat of the extremities, and to apply hot bottles when necessary.

In the excellent clinical reports, with which Drs. Stokes and Graves have lately favored the profession, it is stated, that strychnine, in doses of one-twelfth of a grain, given in a pill twice a-day, was found useful in the Meath Hospital. They tried this remedy on the authority of a paper by Dr. Rummel inserted in the June Number (1825) of Hufeland's Journal. On some late occasions this remedy has been tried in my practice, and was found exceedingly beneficial, even in cases where there were most extensive ulcerations in the bowels. It succeeded after every other remedy had failed. I have also seen beneficial effects from the acetate of lead, given in two or three-grain doses several times a-day. The sulphate of copper has also been strongly recommended in such cases by Dr. Elliotson; I have given it a trial, and can speak favorably of the result.



The sufferings of patients are often much aggravated by flatulent distension of the intestines, which may generally be relieved by turpentine, assafœtida, or tobacco injection. During convalescence, the greatest attention must be paid to diet, clothing, and exercise.

2d, *Treatment of the acute disease as it occurs in warm climates.*—The only difference which is to be kept in view between the treatment of the disease as it occurs in this country and in tropical climates, is, that the disease being in the latter more severe, requires more active practice. It is also necessary to impress on the minds of those who are destined to practice in warm countries, that cases are frequently fatal, although the symptoms are apparently mild. That such cases are frequent, any reader may satisfy himself by consulting the works written upon this subject; and it has led some to divide the disease into two varieties. For instance, Mr. Annesley states that there are two varieties, the acute and erythematic. “The first,” says he, “is acutely inflammatory, and if not checked by bold and decided practice, will very soon terminate fatally, or lay the foundation of that chronic stage of dysentery which disables so many men. The second is more obscure, and consequently more dangerous. There is dull, deep-seated pain in the bowels, sufficient to distress a patient, but not so severe as to excite alarm. There is no external pain, the pulse is not materially altered, neither is there any increased febrile action. This disease,” continues he, “is confined to the mucous membrane of the colon, and consists of a less acute form of inflammation of this membrane. If not treated successfully, it runs at once into ulceration throughout the whole intestines.”

These extracts are taken from Mr. Annesley’s octavo work, which contains much valuable information. It appears to me, however, that the term erythematic is most unhappily chosen, at least in contradistinction to the first variety, as the inflammation in both cases may be said to be erythematic.

Great prejudices have prevailed in India, and I fear still exist among the older practitioners, against the employment of general bleeding both in fevers and dysentery; and the action of calomel is too much trusted to in these diseases. Drs. Johnson and Ballingall were among the first who, by example and precept, endeavoured to root out this error, by an appeal to the morbid appearances which I have already described. In later times, we have received additional testimony of the advantage of general bleeding. Mr. Annesley, in detailing the treatment of the acute form, when it occurs in plethoric individuals, recommends general bleeding, and states, that much is to be done in a few hours, and if it be not got under controul in that time, the patient is either lost, or the basis of a broken constitution is laid. But in those who have been long in India, and, I suppose he means, who have shattered constitutions, he says leeches will answer better, because they “diminish action without destroying power; and any quantity of blood may be taken by them.” I cannot agree with this too sweeping statement; for I am certain, by experiment and careful attention, that individuals will bear the loss of blood better, ounce for ounce, by general bleeding, than by leeching. The cause of this remarkable circumstance cannot be determined,

although it appears probable that it may in part be attributed to the long continued unpleasant sensation produced by the biting of the animals, and to the fatigue of the operation; but I am satisfied of the fact. Leeches are certainly to be preferred, however, when the disease is of long standing; they operate beneficially in many cases, when general blood-letting would no doubt prove injurious. Two great advantages which the lancet possesses over leeches, are, that we can stop the bleeding from a vein in a moment, and promptly alter the determination of blood.

At page 278 of Mr. Annesley's octavo work, the following passage will be found:—"Full doses of calomel, with such other purgatives as act upon the mucous glands, are required here, and should be continued without intermission till healthy action is produced." To those who have seen the morbid changes produced on the intestines, who know and are acquainted with the dreadful mortality which is caused by dysentery among Europeans, and who have seen individuals reduced to premature old age sent to this country on the pension list, will join me in stating, that much injury has been inflicted by the mercurial treatment too generally pursued by medical men in the east; and upon which the passage last quoted affords me an opportunity of commenting. At this moment, I have before me the detail of many cases, which have been corroborated by frequent communications with practitioners who have served in India, of the baneful effects of the practice which seems still to be inculcated by Mr. Annesley.

It is the custom in India to give calomel in large and frequently repeated doses, which is followed by the daily exhibition of drastic purgatives, which are given, to use Mr. Annesley's words, "to act upon the *mucous glands*, and are to be continued without intermission." Under this treatment, the proportion of deaths is sometimes so great as 20 per cent., and on some occasions, it has been known to be about 30 per cent. Thus, Dr. Ballingall has shewn, that in his Majesty's 59th regiment, during eight months of the year 1806, ninety-seven men were affected with dysentery, of which number twenty-eight died. In his Majesty's 30th regiment, during seven months in 1807, four hundred and ninety-one men were affected with dysentery, of whom eighty-five died. And in the Royals, during eight months in 1808, five hundred and forty-one men were affected with the disease, of whom ninety-eight died. I have also some details of the result of the mercurial practice in India, in my possession, which shew the enormous quantities of calomel exhibited in dysentery of late years, with the bad success of the practice. It is no uncommon thing for an individual to take three hundred grains of pure calomel, before he dies under the digestion of it. One individual took the enormous quantity of five hundred and twenty-three grains; another six hundred and ninety-five; a third, seven hundred and sixty; and a fourth, nine hundred and seventy-four, which last is somewhat more than sixteen drams! So far from curing inflammation and ulceration of the mucous membrane of the bowels, I know no plan more likely to produce these states; but it is doubtful, whether the calomel, or the continued use of drastic purga-

tives, is most injurious. The generality of purgatives operate by producing irritation and increased secretion on the whole mucous surface, which is the very circumstance that ought to be carefully avoided. It appears that many practitioners act upon the principle of getting rid of the mucous discharge, as if it were lodged in the bowels, acting like a poison; whereas it is to be regarded as the effect of increased action. Let it not be supposed, that I object altogether to the use of calomel; on the contrary, I believe that, combined with opium, its occasional use is most advantageous. My observations are only intended to prevent our trusting entirely to its operation, and to guard against its abuse. I shall conclude, by quoting the result of Dr. Cheyne's experience in the treatment of dysentery, with respect to mercury, stated in the Dublin Hospital Reports. "Mercury (says he,) could not be depended upon, and did not relieve in numerous instances when the mouth was affected, and sometimes seemed to increase the disease; and even when the symptoms distinctly pointed out a morbid organization of the liver, the result of this treatment was unsatisfactory." My own experience in this country, as well as within the tropics, enables me to confirm the above statement.

*Treatment of chronic dysentery.*—It must always be recollected, that no case of dysentery is to be regarded as altogether hopeless. From the recoveries which I have seen made, and from the dissections at which I have been present, of individuals who have been long afflicted with the disease, it may be stated as a fact, that the mucous surface heals and becomes restored, if not to its primitive healthy state, at least in such a degree as to preserve life for many years. It is rare in chronic dysentery that we shall be called upon to take blood from the arm, but the occasional application of leeches is most serviceable, together with counter irritation, gentle laxatives, an occasional opiate, and astringent medicines, such as catechu, and solution of sugar of lead, and sulphate of zinc. Great care must be taken of the bowels and the diet, small quantities of light and digestible food are to be allowed at each meal, and the patient should not be permitted to eat oftener of any thing than once in five or six hours. I have been very successful in the treatment of chronic dysentery, by following this plan, together with an occasional warm bath, and long perseverance in the tartar-emetic ointment, as well as by the occasional use of mutton suet boiled in milk, which is to be strained immediately after it is taken off the fire; sugar is then to be added, with a little spice to make it palatable; about four ounces of this are to be taken once or twice a day, mixed with rice,\* if the patient's stomach will bear it.

#### CHOLERA.

This term, together with the adjunct morbus, is used, even in common language, to express that a patient is affected with vomiting and purging. I shall first describe the disease which we see in this climate in hot weather, and

\*This is an old remedy; it is mentioned by Sir John Pringle.—The patient should, in general, be kept ignorant of the nature of the preparation, for fear of exciting disgust.



which is frequently denominated cholera morbus; and afterwards the form which prevails in India.

In this country, the disease presents the following phenomena. The first symptoms are, nausea and griping sensations, which, generally speaking, come on suddenly, and soon terminate in vomiting and purging. In very severe cases, the body, and particularly the extremities, become cold, the breathing hurried, the features shrunk, the eyes hollow, with an expression of great anxiety in the countenance; the pulse small and contracted, and soon becomes so weak as scarcely to be felt at the wrist; the thirst is excessive; cold water is the beverage most preferred, which is no sooner swallowed than rejected. A cramp-like feel is complained of in the legs, and sometimes in the arms, as in the severer cases of diarrhœa and dysentery, and occasionally spasmodic contractions of the muscles of the abdomen. The discharge from the bowels, in this country, is generally watery, with very thin and offensive feces; occasionally the discharge looks like water in which meat had been soaked; at other times, bilious dark matter is passed in the first stage of the disease, both upwards and downwards.

*Causes.*—The causes are similar to those which produce other bowel complaints; as cold feet, suppressed perspiration from sudden exposure to cold, cold drinks when the body is much heated from exercise, crude vegetables, constipation, &c.

Cholera prevails in this country, chiefly in the autumn months succeeding to hot summers. In 1803, some very bad cases fell under my notice; and again in the autumn of 1825, when I had the treatment of five or six very dreadful cases.

Nearly two hundred years ago, a Portuguese named Mandelo, in describing the diseases at Goa, makes the following statement:—"The change of seasons from one extremity to another, is the cause of many diseases among the Portuguese, but the most common are those which they call *mordexin*\* or *mordechín*, (the Hindostanee name for cholera,) which kills immediately—burning fevers and bloody fluxes, against which they have in a manner no remedy but bleeding."†

Cholera appeared in India in the worst form in which it has been observed by any individual of the present generation, in August 1817; since which time it has attracted very great attention. It has also been observed in the islands situated in the Indian seas; and more lately many inhabitants of Russia and Poland have fallen its victims.

*Phenomena.*—It is difficult to give an abstract of the descriptions which have been given by the various writers. In some, there were no spasms; in others, there was purging without vomiting, or *vice versa*. Again, in some places, convulsions were often seen; and in others, the powers of life quickly gave way. The following description is taken from the inaugural dissertation of the late

\* This term has been corrupted into *mort de chien*, as Mr. Marshall informs me, by a pun made by Sonnerat.

† Travels into India in 1639, by John Albert de Mandelo, published in London in 1662, with the voyages and travels of the ambassadors, &c. &c.

Dr. James Kellie, surgeon in the Madras army. It is made choice of from its conciseness and correctness.

"It is generally ushered in with languor, lassitude, prostration of strength, anxiety, great dejection of mind, and a sense of cold. In this stage of the disease, the pulse becomes weak, and the skin cool, then follows diarrhœa, vomiting of an aqueous and subalbid matter, urgent thirst and spasms, chiefly in the abdomen and calves of the legs. The pulse is scarcely to be perceived, and the breathing, with frequent sighing, is difficult. All the symptoms now become worse. Spasms more and more urgent take place, and accompanied with very great pain. The pulse is not to be felt, heat leaves the body, and the skin is covered with cold sweat, the eyes turned up in their sockets, sometimes appear red and suffused with blood; the head, as if borne down by its own weight, rests upon the breast and shoulders, and the hands hang motionless. The body is sometimes convulsed, and at others lies incapable of motion. Vomiting usually ceases altogether about the termination of the disease, but stools are passed involuntarily. At last the patient falls into coma, from which he can hardly be awakened; when roused, he again immediately falls into it, and lies moribund.

"Through the whole course of the disease, the urine is very sparingly secreted. The matter which is discharged from the stomach, and at stool, has the same appearance. The tongue is pale, and generally moist; there is restlessness, sometimes though rarely delirium occurs."

"The symptom (says Mr. Annesley, at page 36, octavo ed.) which I have always looked for as particularly marking this disease, and I have never seen a case of the epidemic wherein it did not exist, is a burning sensation between the scrobiculus cordis and umbilicus, precisely over that spot where the vermilion blush is invariably found on examination after death. This is one of the first symptoms the patient is sensible of, and it is generally felt before vomiting or purging takes place. Whenever this painful sensation is accompanied with an anxious look, and a general feeling of weakness or oppression, even without vomiting or purging, we may be certain the disease is at hand; and at this stage it is generally manageable, if boldly and decidedly treated."

An interesting fact is observed in cholera, and in a less degree in the cold stage of intermittent fever, which is the impossibility in the worst cases of raising the temperature of the body by the application of heat. A strong instance of this is mentioned by Mr. Daun, in the Medical Reports on Cholera, p. 272. "O'Brien lay on the steam couch for three hours before he expired, in a heat that I am convinced would have raised a lifeless body to a temperature nearly, if not equal, to that of a person in health, but his body preserved an icy coldness to the last."

*Causes.*—Notwithstanding the interest which this disease has generally excited, it must be confessed that we are quite in the dark respecting the specific cause, when it appears like an epidemic. Some think it contagious, because the disease spreads from post to post, in the exact track of human intercourse,

and in the very teeth of the most dreadful monsoons. On the other hand, its attack is too sudden and general to lead us to attribute the spread of the disease to contagion; and it also disappears too suddenly to reconcile it with any of the known laws of contagion. For example, it appeared suddenly in many situations, created great ravages during one day and night, and disappeared in the course of a few days afterwards. Thus, we are informed by Mr. Alardice, surgeon of his Majesty's 34th regiment, that the disease attacked that corps on the 21st September, and committed dreadful ravages before night. On the 25th it abated remarkably, and in three days more entirely vanished. If it were contagious, it must have affected a greater number of individuals than have been actually seized, particularly as no steps were taken to prevent communication with the sick; and it appears from authentic accounts, that only about  $7\frac{1}{2}$  per cent. of an immense population were attacked with this disease. Nevertheless the enforcement of the quarantine laws by the British government on vessels arriving at the present crisis from Russia, is a measure of prudence, and it has tended much to appease the public mind. In India cholera seems to have occurred under every condition of the atmosphere, when the weather was close and sultry, as well as when it was very cold and dry. But it would appear that the most fatal ravages took place rather in close sultry weather, or immediately afterwards, and that it vanished after thunder storms and heavy rains. Dr. Tytler has written many pages to prove that it is caused by diseased rice, the growth of an unfavorable season. Dr. Ranken, who wrote an interesting paper on cholera, in the 19th vol. of the *Ed. Med. and Surg. Journal*, attributes the disease to the conjoint operation of sudden changes of weather, humid soil, and damp atmosphere, in connection, more especially, with a diet of rice and other grain, vitiated by the wet of the season. Many others have attributed cholera to the heat of the climate, but this is not likely; it appears to be rather attributable to sudden cold in hot weather. It has been stated in another part of this work, that cold acts upon the body in the production of disease, not according to its intensity, but to the previous temperature of the body itself to which the cold is applied. Upon the whole, I feel disposed to regard Dr. Ranken's theory as approaching nearest the truth; although Mr. Marshall states, at page 191 of his work already quoted, that "cholera did not generally prevail among the troops in proportion to the degree of exposure, or alternations of weather to which they are liable, or to the privations under which they suffered." It is a disease, however, which appears chiefly to have attacked natives, and that British officers were singularly exempt from its influence. It is also admitted on all hands, that the disease, generally speaking, does not become so rapidly hopeless in European constitutions, as among the natives; which so far confirms Dr. Ranken's notions.

*Appearances on dissection.*—"The blood vessels of the brain, (says Dr. Kellie,) are generally found turgid with blood, and in some instances, an unusual quantity of serum effused in the ventricles. The lungs appear to be *overloaded* with blood, and the heart itself seems distended with coagula. In the



abdomen, *both the veins of the omentum and mesentery are turgid with blood.* The intestines are outwardly red, and inwardly they are covered with a thick subalbid mucus; the stomach has often a similar appearance, and its internal coat sometimes shows red spots."

Constrictions also, both of the pylorus and intestines, are to be seen in some few instances. The only other appearance worthy of remark, mentioned by Dr. K. is, "that the bladder is in almost all cases empty, very much contracted, having more the appearance of a virgin uterus than a bladder."

My friend Dr. Badenach, when surgeon of the 59th regiment in India, saw the following appearances on dissection: "The stomach of a scarlet colour, blood-vessels of the intestines and omentum loaded with blood. In one instance, the vena cava was distended to a very great size. Either the spleen or the liver, or both, are exceedingly gorged with blood. In some cases, the vessels of the head have displayed signs of accumulation."

The following appearances were observed in a Sepoy, by Mr. Whyte, on dissection.

"An enormous distension of the stomach and bowels, not from air, but from a gelatinous substance; little sanguineous turgescence on the surface of the organs, but an absence of the moisture and glossy character of health; the liver much enlarged from the quantity of blood contained in its vessels, and on one part of its convex surface, a considerable extravasation of blood; the gall bladder filled with bile, and projecting beyond the edge of the liver, the bile of a very dark colour, and the gall-duets pervious. The contents of the small intestines were dark coloured, apparently from an admixture of bile; the contents of the large intestines resembled the white albuminous matter that was discharged before death. The urinary bladder was quite empty, and wholly shrunk into the pelvis, the kidneys apparently diminished, the lungs so much collapsed, as hardly to fill one half of the cavity of the chest; no fluid in the pericardium.

"In the European subject, the appearances were the same, with these two exceptions, the stomach and intestines were distended with flatus, instead of with gelatinous fluid, and hence collapsed upon puncturing them; the veins throughout the outer surface of both, as well as the mesocolon, were turgid with blood."

The following account is given of the appearances found on dissection at Bombay.

"Not a single thoracic or abdominal organ was to be traced unmarked with vascular rupture, or turgescence of black blood, or unstamped with some other morbid appearance; the stomach and liver, however, were chiefly affected, and the urinary bladder was always shrivelled. The blood, when drawn from the arm, was found to coagulate very loosely, and sometimes not at all, and the arterial and venous blood were of a like purple hue."

At Ceylon the following appearances were observed by Mr. Marshall. "In cases that terminated rapidly, the blood vessels of the membranes of the brain were generally found unusually turgid. The dura mater presented a greater

number of bloody points than is commonly observed. The increased turgidity of the blood-vessels of the pia mater, was still more remarkable than in the dura mater. When the former membrane was removed from the convolutions of the brain, it appeared at a little distance like a coagulum of blood. The plexus choroides, and velum interpositum, were likewise unusually vascular. In protracted cases, no very unusual turgescence of the blood-vessels was observable.

“*Thorax.*—The lungs were frequently found gorged with blood. The right side of the heart, and the venous trunks, were often unusually filled with blood, sometimes the heart was more flaccid than natural.

“*Abdomen.*—When cases ran a rapid course, the intestines viewed *in situ*, appeared remarkably white and bloodless. In protracted cases they were frequently reddish. The villous coat was often particularly vascular. Some cases occurred, where the vascularity was so great, as to resemble a successful injection of the intestines with fine size, of a reddish brown colour. There was, however, no thickening of the coats of the intestines.

“The stomach and intestines generally contained more or less of a turbid, watery, congee-like substance. Sometimes flakes of a tenacious mucus were found floating in the fluid. The villous coat was for the most part covered with a thick layer of adhesive mucus.

“*Liver.*—This organ did not present any morbid appearance. The gall bladder always contained more or less bile. In quality this secretion was found possessing all the different shades of colour and consistency, between pale and watery, to black and pitchy.”

*Pathological remarks.*—We have no account of any disease creating such ravages in so short a space of time, since those recorded in holy writ. An opinion has been too prevalent, that the disease, even as it occurs in this country, depends upon the state of the bile, and particularly an overflow of that secretion; but my belief is, that this pathology is erroneous. Another prevalent opinion is, that the disease is one of inflammation, but it is certainly not correct, although it frequently follows in the train of consequences. The first circumstance which occurs in viewing the disease itself, and the accounts which have been given, is the irregular determination of blood, which accumulates in internal parts, leaving the surface of the body quite pale. As in the cold stage of intermittent fever, many people have exhausted their ingenuity in abortive attempts to discover the cause of this phenomenon, instead of inquiring into the effects produced. The first point of inquiry ought to be directed to discover what has become of the vital fluid. This is most satisfactorily answered by the numerous dissections which have been recorded by different individuals. The balance between the arterial and venous systems is lost, and the blood becomes accumulated in the latter. In the majority of cases, the liver and mesenteric veins shew most engorgement; but in some cases which occurred at Ceylon and other places, the venous system of the brain was congested, and

the liver was quite free. Thus Dr. Johnson informs us,\* that some of Mr. Finlayson's patients died after a few hours, without any signs indicating cholera, except diminution of strength; and the following marks were found on dissection. Much congestion of the brain, presenting layers, as it were, of black coagulated blood, or covered with general echymosis. In some cases, abundance of blood of the same colour flowed both from an incision into the brain, and from the sheath of the spinal marrow.

In some cases, the liver has been ruptured from the impetus of blood. Another circumstance worthy of remark, is the general absence of bile in the intestinal tube, as well as the suppression of urine. The general torpor which prevails, and which comes on so suddenly, may be fairly attributed to the congested state of all the vital organs. The spasms and cramps which take place, may be also partly attributed to the same cause. The state of the blood deserves also to be noticed; it is thick and very dark coloured when drawn from a vein. Almost all writers notice this, even at an early period of the disease; and I beg particularly to refer to the valuable cases published in Mr. Annesley's work already quoted, and to his pathological observations at page 126.

The dark and pitchy appearance of the blood, when drawn from a vein, is not peculiar to this disease; it is seen in the cold stage of intermittents; I have seen it in the cholera which prevails in this country; and it is also observed in many of the cases of fever which are called congestive. It shews, I imagine, that the lungs suffer very much from congestion early in the attack. "The lungs (says Mr. Annesley) were generally shrunk, collapsed, filled with black blood, heavier than natural, and of a fleshy, hepatised, or bruised appearance." In fact all the functions of the body, in this disease, seem to be impeded or destroyed, except that of the mucous membrane of the stomach and bowels, which appears to be engaged in secreting and discharging an immense quantity of serous fluid. This must be regarded as one of those efforts of the constitution which we see so frequently in operation to save life.

*Treatment.*—The method of cure may be very shortly summed up. In the first place, we have to endeavour to re-excite the heat of the surface by all possible means which can be resorted to, without moving the patient much, and to restore the lost balance of the circulation, by opening a vein as quickly as possible. The great majority of Indian practitioners agree in these two particulars, and that if they can get the blood to flow, the patient has the best chance of life; but I fear too little attention has in general been paid to the period when the blood is taken. Although it affords the greatest chance of safety in the first stage, which extends only, I imagine, to an hour, or at most two, from the first moment of attack; it is death in the last stage, after the body has not only been weakened by the continuance of the congestion, but by excessive evacuations.

"I beg to give my testimony (says Dr. Daun) in favour of bleeding in the treatment of that very fatal disease. So far as my experience enables me to

\* Medico-Chirurgical Review, Anal. Series, No. 3.



form an opinion, bleeding, *early and copious bleeding*, is the only means of cure yet discovered on which any reliance should be placed." At another place, he states, that "in the cases successfully treated by bleeding, it was remarked that the pulse, though feeble and intermitting when the vein was opened, became stronger and more equal in its pulsations as the blood flowed. The patients also expressed their receiving the greatest relief from the bleeding. In two cases, the pulse, about 20 or 30 minutes after the first bleeding, (which was to the extent of 32 oz.) began to sink again, and to intermit, and the cold perspiration and indescribable anxiety peculiar to the complaint, to return. The vein was in both cases again opened, and greater relief was discovered from the second abstraction of blood than from the first; an equal or even larger quantity being lost by the second than by the first bleeding."

"In every case of cholera, (says Mr. Donaldson in the Reports,) when the patient applied in time, and the arterial action was sufficiently strong to admit of venesection, I took from 12 to 16 oz. of blood from the arm, and it was *invariably* followed by mitigation of all the symptoms: the spasms disappeared, and the subsequent alvine evacuations were generally bilious," &c. "In those cases where collapse had taken place, bleeding was of course inadmissible."—P. 168.

Dr. James Johnson claims the credit of being the first who recommended the use of the lancet in this disease, but from the passage quoted at page 326, it would appear to have been employed by the Portuguese two centuries ago.

Stimulants of the strongest kind are to be given, even in the first instance, with a view of hurrying the circulation, and obtaining a flow of blood; and they are more necessary afterwards to support the strength, particularly when bleeding is inadmissible. If the venous congestion is removed by these means, the evacuations will cease, and we shall then have to give the constitution further assistance, by allaying the irritability of the nervous system, which is done by opium.

Care should be taken to assist in restoring the functions of different organs; and this will perhaps be best effected by the exhibition of moderate, but frequently repeated doses of calomel conjoined with a small proportion of opium.

In conclusion, I have to remark, that after the first danger has subsided, two things are to be attended to. On the one hand, to support the strength by proper means, and, on the other, to be on our guard to counteract local inflammation, not only in the brain and liver, but in the lungs and bowels, which last is best effected by the application of leeches and counter-irritation. "In every case of recovery (says Dr. Daun, in the Medical Reports,) from spasmodic cholera, a state of re-action has followed the asthenic state." P. 272.

Sydenham, in treating of the symptoms of cholera, which prevailed in London in the year 1669, states, that they "often destroy the patient in twenty-four hours," (Swan's Ed. p. 147.) I beg to subjoin the following case of cholera, which proved fatal in Dublin in thirteen hours, for which I am indebted to Mr. Marshall.

"Private Dickie, 26th regiment, aged 19, was brought to the hospital on 13th August 1826, in a state of great exhaustion, labouring under violent vomiting and purging, with which he had been attacked about an hour previously. He is also affected with severe spasmodic action in the bowels, and cramps in the legs; the matter vomited is bitter, and has a dark green color,—that passed by stool, has a dirty grey appearance: face and extremities of a livid hue, cold and clammy; no pulse at the wrist; the action of the heart is very obscure; articulates with difficulty, and moans incessantly; he cannot protrude his tongue; eye-lids half closed; appears on the point of expiring, and he died before the lapse of twelve hours from the time of his admission, notwithstanding the adoption of the most judicious practice.

"The only probable cause ascertained, is the drinking a quantity of porter before going to bed last night, but not to intoxication."

I am indebted to the kindness of a friend for the following account of cholera as it appeared in Astracan in the month of August, 1830:—

"Though the cholera had made its appearance at the mouth of Volga about six weeks ago, it was not till Friday the 30th ult. that its being actually in the city was ascertained. No sooner was this made known to the public authorities, than a council was summoned, to make the necessary arrangements for giving all possible medical assistance and directions to such as might be seized with it. Papers were instantly printed and circulated, with a statement of the precautions to be taken for avoiding the distemper, and a sketch of the means of cure to be employed in the first instance, till medical assistance could be procured,—with a list of the names and places of residence of all the physicians in town. In a few days accounts poured in from all quarters, from which it appeared that the disease was of a much more malignant and alarming nature than in 1823. Some were cut off almost instantaneously, many in the course of two hours, and, *with the exception of those who were instantly bled*, it was said that most of those who had been seized with it, expired.

"On Wednesday the 4th inst., being the 6th day of the cholera, it made its appearance in the Mission House, in the case of Mr. B. On calling, I found him in great agony, often convulsed in a most extraordinary manner, and giving vent to his feelings by screams and groans, which it seemed scarcely in the power of nature to suppress. The sound of them pierced one's heart. He was seized about 4 o'clock, and a few minutes past 10 expired.

"Mrs. — was seized about 9 p. m., and died in about 24 hours. During the day it was supposed that she was getting better, but a new paroxysm cut her off towards evening.

"Mr. — on being seized was instantly bled, and with success; other precautions at the same time were used, which rendered his case not peculiarly alarming.

Mrs. — was seized with great violence; she was instantly bled. On the use of this and other means, she was, in the course of two hours, brought into a profuse perspiration, and was much better next morning; but such was her

debility towards the end of the week, from almost incessant perspiration and occasional relapses that it was not till the 15th (Aug.) she could be considered as decidedly in a state of convalescence.

“According to the most authentic accounts, when the disease was at its height, the number of funerals on one particular day was 500, and on another day 480.

“During the progress of the disease, more than 60 officers, from the governor of the city, the commander of the fleet, &c. downwards, fell victims, and the number of dead of all descriptions in the city alone, (the resident population of which is not above 40,000,) is calculated at about 6,000 individual-, besides 1,000, or according to some accounts nearly 2,000, of those from the interior of Russia.

“From the statements now given, it would seem that a sixth or seventh part of the population of Astrachan, (chiefly adults) has been cut off by the cholera, and it is supposed that the one-half of the adults have been more or less affected by it. Some children were seized with it and died, but the proportion of these in comparison with adults was small.”

#### INFLAMMATION OF THE INTESTINAL MUSCULAR AND CELLULAR TISSUES.

I scarcely believe that acute inflammation ever primarily affects the muscular and cellular tissues. On dissection they are frequently found altered in appearance and structure by inflammation and its consequences, but never, according to my experience, without distinct marks of the diseased action having spread from the mucous or serous tunics. This part of pathology, however, is still open to future investigation, and the subject is merely introduced, to shew that it has not been entirely overlooked, and to mention one symptom which is generally supposed to distinguish inflammation of the muscular coat from that of the other parts of the intestine, and to notice chronic inflammation, with thickening, induration, and permanent constriction of the bowels.

It has been repeatedly observed by writers, and has been shewn in this work, that in pure peritonitis the bowels are generally easily moved by the ordinary remedies; and that, in inflammation of the mucous membrane, there is generally diarrhœa. Now the peculiar circumstance to which I have alluded, when the muscular coat is in a state of inflammation, is obstinate constipation. Provided a practitioner is aware that inflammation is going on in the abdomen, it is really a matter comparatively of little consequence, what tissue is primarily affected; and it will be almost invariably observed in practice, that those who are most apt to draw minute distinctions, are not the most profound thinkers.

Portions of the alimentary canal are often observed on dissection to be thickened and indurated, and contracted in proportion to the thickening. The parts most frequently found in this state are, *first*, the point of junction between the stomach and duodenum; *secondly*, the point of junction between the ileum and cæcum; *thirdly*, the termination of the sigmoid flexure of the colon, or some



part of the rectum; and *lastly*, the whole extent of the colon. In all these situations, the peritoneal coat is generally found sound, and the mucous membrane is sometimes observed to be in no other degree affected than being puckered; so that I am led to conclude, that although the muscular coat and cellular tissue are not so liable to be primarily affected with acute inflammation, yet they are frequently the seat of chronic inflammatory action. It must be confessed, however, that there may be some deception here, as the inflammation may have extended from the mucous membrane to the subjacent tissues, as it has been shewn that the former is capable of restitution, even after it has been in a state of extensive ulceration. The cellular membrane of the intestines is more frequently found to be the seat of thickening than the muscular tunic; but occasionally we see the muscular fibres very much enlarged and thickened, in the state that has been denominated hypertrophy. This thickened condition of the coats of the alimentary canal, which is produced by an effusion of lymph, has been too often confounded with scirrhus and cancer; and many people are still in the habit of calling every structure in the body scirrhus, which is ascertained to be harder than natural.

In general, it is impossible to determine by the symptoms, whether or not the parts are in this condition, except the contraction is within reach of the finger, at the lower part of the bowel, or is situated about the termination of the sigmoid flexure of the colon, which may give a particular form to the stools. When the thickening has been found at the pylorus, the symptoms were those of indigestion, attended with uneasiness after food had been many hours in the stomach, and when it might be supposed to be in a state of preparation to pass into the duodenum. When situated in the ileo-cæcal valve, or in the course of the colon, constipation, distension of the abdomen, with frequent threatenings of ileus, have been remarked, together with pain in the situation of the caput cæcum.

In one case where the colon was affected, the hardness could be traced during life throughout the whole extent of its tract. When the termination of the sigmoid flexure, and the rectum, are the seat of the disease, besides constipation, and occasional threatenings of ileus, the history of the case and the state of the stools will in general lead us to suspect the existence of this morbid condition of parts. In addition to habitual constipation, we shall find that there has long been inclination to considerable straining when at stool, which has gone on increasing, so as to induce the habit, which has at last become inveterate, of sitting and straining for a very considerable period, before a moderate discharge of feces can be procured, and after all, the person rises dissatisfied with his efforts, and with a full, loaded sensation in the belly. Under such circumstances, when the evacuation from the bowels is of the ordinary degree of consistence, the feces have, it is alleged, a very peculiar form, being either of a worm-like shape, or flat and tape-like, but I have little faith in this. The only cases which are capable of being cured, are those situated in the rectum, which are within reach of a common bougie, or low down in the sigmoid flexure of the colon. With respect to the contractions in the other parts, much may be done to arrest

the disease, and alleviate suffering, by attending to the diet, and to the state of the bowels. To prevent the parts running into true scirrhus or cancer, the occasional application of leeches and blisters are to be had recourse to, and every cause is to be avoided which can have the effect of irritating the parts, particularly drastic purgatives.

*Scirrhus of the stomach and intestines.*—In the last article, simple induration was described, affecting various parts of the alimentary canal, in which the tissues were not confounded, but merely in a state of hypertrophy, and owing, it is conceived, to chronic inflammation, attended by new deposition. In true scirrhus, on the other hand, there is a thickening of parts, with disorganization, so as to confound the different tissues. It is supposed by Meckel, and other pathologists, that scirrhus degeneration commences in the tissue which incloses the vessels, and the mucous glands, from whence it extends itself so as to involve the mucous and the muscular coats, destroying their natural appearance, rendering them thicker and harder, and terminating at last, if the patient live long enough, in carcinomatous ulceration.

Notwithstanding the great attention which has been paid by many eminent men to the formation of schirrus, it is still involved in mystery. It will be found, however, to be a prevalent opinion, that it depends upon chronic inflammation, of a specific nature, which has a tendency to the formation now under consideration; in the same manner that long-continued inflammation in gouty subjects, being of a specific character, has a tendency to deposit calcareous matter. It is interesting, however, to know, that the serous coat of the stomach and bowels is the part last affected, so that on dissection it is found either quite healthy, or only slightly thickened or opaque-looking, still preserving its natural gloss; if there are traces of inflammation, they will be observed to be recent. In two preparations only, have I seen tubercles projecting from the serous coat, while the other structures were affected with schirrus; one of these, a cancer of the stomach, is now in my museum. There is always a difficulty in examining an indurated part with a view to ascertain the state of the vessels; but I think I have seen the veins much thickened in their proper coats, not in the part itself, but in the sound texture in its vicinity. In the soft cancer, which particularly affects the stomach, I have repeatedly seen vessels, supposed to be veins, thickened and enlarged, and on two or three occasions, a cream-like fluid was found in them.

Scirrhusities are most frequently found in the situations enumerated under the last head, viz. the pylorus, the caput cæcum, and in the course of the rectum, which may be attributed so far to these parts being more exposed than others, to be irritated by the substances which have to pass through them. Scirrhusities may also, however, exist in other parts, more particularly near the cardiac orifice; they are sometimes extensive, so much so as to involve the whole of the stomach, and sometimes a large portion of the intestine.

Fungous excrescences, of a cancerous nature, are rarely met with in comparison to the scirrhus indurations, nevertheless they have been found in eve-

ry part of the alimentary canal, and were probably denominated polypi by the older writers. Brechet has lately described a case, which appears to me to be of this kind, under the name of polypus, which extended from the cardiac orifice into the duodenum. This kind of affection is noticed in Professor Monro's excellent work on morbid anatomy of the gullet, who has denominated it the melt-like cancer. It certainly so far answers the description, because it is white and soft; but being fibrous, cannot be washed away or softened down like a melt; it rather resembles a young placenta well macerated. Cancerous excrescences are also sometimes found in the rectum. Meckel says they are more frequently seen in this part of the bowel than any other; but they differ considerably from those found in the stomach, which are more soft and spongy, and less pendulous. I have several times met with a white projection, almost the size of a pea, from the mucous membrane of the stomach and bowels. The base is sometimes broad, at others the tumours hang by a narrow pedicle. Perhaps this is the white tubercle of authors. I have a preparation shewing these bodies along with open cancer of the stomach.

*Symptoms of cancer of the stomach, &c.*—In the early stages it cannot be distinguished from dyspepsia; and sometimes even to the very last the symptoms are not more severe. There is a preparation in my museum, shewing a section of the stomach, more than half an inch thick, exactly like fibro-cartilage; and although the whole stomach presented the same appearances, the symptoms were those of ordinary dyspepsia. In general, however, there are great emaciation, restlessness, fever during the night, thirst, sallow colour of the skin, and shooting pains extending in different directions from the part affected. In scirrhus or cancerous affections of the stomach, we are generally able to tell whether the cardiac orifice, or the pyloric, is principally affected; if the former, pain is experienced in attempting to swallow as soon as the article gets low down in the œsophagus, where it is felt to lodge; frequently the patient is obliged to force it by eructation, from the pain excited by its presence, but which ceases as soon as the food passes into the stomach. The pain is sometimes so great, that patients put off eating till nearly famished; and some have described to me, that they experienced as much difficulty in introducing a table-spoonful of milk, or any other fluid, as from a mouthful of solid food. But when the disease is situated in the body of the stomach, the food may pass readily in, but occasions so much suffering, that the patient is obliged to discharge it by voluntary efforts to vomit; sometimes a considerable quantity of serous fluid is discharged by eructation, as in water-brash. When the pylorus is affected, it will be found that the uneasiness does not become very great for some time after taking food, particularly if motion be avoided; but at length the pain becomes intense; nausea is excited, and the only temporary relief for the unhappy sufferer, is to get rid of the offending matter by vomiting. On some occasions, there is ardent thirst and burning pain, and the patient describes his sensations as if his stomach were corded to the spine; when he changes his posture in bed, he feels the stomach falling from side to side, in the



same manner that a woman for some days after delivery feels the uterus. Feculent matter is occasionally vomited; this happened lately in a remarkable case under the care of Mr. Mitchelhill, and to whose kindness I owe a valuable preparation of the parts. A large oval opening was found in the centre of a cancerous mass in the stomach, communicating with the transverse arch of the colon. In all cases the pain is increased more or less, on pressure; and in some the induration may be felt, but I imagine, only when the whole stomach, or a considerable portion is affected. In one case the stomach was felt by myself and others at the umbilicus, and the woman herself placed our hand upon it; but in that instance the whole stomach was indurated, in some places thickened to the extent of more than an inch, with such a diminution of its cavity, that it could scarcely hold six ounces of alcohol thrown in, after it was removed from the body, in order to distend it. The immediate cause of death, in a considerable number of cases, is acute peritonitis, occasioned by the contents of the stomach passing into the abdomen through an ulcerated opening. This happened in the case alluded to above, and my museum contains several such specimens.

Cancerous affections about the head of the colon and the rectum, but particularly the former, are apt to give rise to symptoms of ileus. There is in general great irregularity of bowels; they are either constipated or loose. The evacuations are more than usually fetid, and there is a pain of a shooting character in the situation of the disease. If in the caput cæcum, there are frequently considerable fulness, and increased tenderness on the application of pressure; if the disease be confined to the rectum, frequent tenesmus and excoriations about the anus may be expected, together with considerable discharge of sanguineous-looking matter when the disease is far advanced.

*Causes.*—The disease appears to our senses to be produced by accidental causes; but it is probable, that as pathology advances, it will be found to depend upon some other circumstances, perhaps upon original formation, either independent of, or connected with, specific action in the capillary arteries or veins. The woman from whom the stomach was taken which was so much indurated, had been for many years a notorious dram-drinker; she attributed the commencement of her complaint, and I believe truly, to a blow received eight months before her death, in the region of the stomach. A gentleman who had a large cauliflower excrescence in the stomach, had been all his life fond of good eating and drinking, and perhaps rather indulging in these respects; yet he was strong and healthy, and had no complaint till he received a fall from his horse one night returning home from a jollification. He pitched upon his shoulder, and sustained such a contusion, as induced him, I believe for the first time in his life, to seek for medical advice. The doctor purged him well with drastic medicines, till he made the poor man really sick, and then, being resolved to make a good job out of a bad customer, he discovered some obscure disease of the liver, and as he knew mercury to be a remedy for affections of that organ, he mercurialized him well, so much so, that he kept up a salivation for many weeks.

During this period, the patient felt for the first time that he had a stomach; his appetite became impaired, and as the doctor knew that tonics were good for that, he sent many bottles of such drugs. Bark, steel, and bismuth, were at last had recourse to, but, alas! the patient got weaker and weaker; the doctor grew tired of his patient, and the patient dissatisfied with his doctor, so that they parted, as it were, by mutual consent. Some time after this he fell under my care, when the symptoms of scirrhus of the stomach were so decided, that I had not the slightest hesitation in giving an opinion to that effect.

The history of both these cases is quite distinct; and a great many such might be quoted, in which the commencement of the affection could be traced to a particular cause; but it would be a pathological error to assert, that the disease in the one case was owing to the blow; or in the other, to the specific action of mercury.

*Treatment.*—Although no means hitherto devised will cure carcinomatous affections, yet a great deal may be done in the way of checking the violence of the disease, mitigating suffering, and prolonging life. The chief circumstance to be attended to, is, to avoid eating any article which is likely to produce irritation. In very bad cases, patients have been much benefitted by ass' milk, and have even recovered considerable flesh and strength under its use; thin arrow root and gruel are to be tried; if ass' milk cannot be procured, fresh whey, with or without an addition of cream, is to be substituted. If the body still emaciate, additional nourishment may be thrown into the rectum, in the shape of beef tea, mutton broth, &c. The bowels must always be attended to; and the best manner of doing this is by an injection of senna and castor-oil, administered every second or third day, as may be necessary. If the patient be teased with vomiting, and worn out by pain, the most likely method of allaying both, is to exhibit small but repeated doses of the sedative solution of opium, which, after trying every other means, I have found to be the best. Should the pain, however, still persist, a few leeches may be applied; or if the patient be very weak, counter-irritation is to be produced, with the ointment of the tartrate of antimony. Frequently, when the patient feels a little better after this treatment, his relatives will be found anxious to force nourishment upon him, such as beef tea, animal jellies, and even wine; but they never fail to produce an increase of suffering in severe cases; therefore physicians should be particularly careful to impress upon friends the necessity of attending strictly to the regimen prescribed.

## CHAP. VIII.

### DISEASES OF THE LIVER AND SPLEEN.

---

IN this chapter, I shall treat of inflammation of the liver ; abscess ; tubercular formation ; and scirrhus ; also of jaundice ; and gall-stones ; and diseases of the spleen.

#### INFLAMMATION OF THE LIVER.

ACUTE inflammation of the proper substances of the liver is of comparatively rare occurrence ; I believe that the peritoneal coat of this organ is more frequently the seat of the disease, and that inflammation of the liver is often confounded with functional and structural derangement in neighboring organs. I have seen some remarkable cases of this within these few years. One dissection revealed pericarditis, another inflammation of the inferior lobe of the right lung, and a third a collection of matter in the throax ; all of which had been mistaken during life, and treated for hepatitis by sundry courses of mercury.

The liver, like other viscera, may be affected with inflammation in various degrees of intensity and extent of surface ; and these will give rise to symptoms of corresponding severity ; but it will be sufficient to describe the acute and chronic hepatitis.

Some are of opinion that acute hepatitis is an inflammatory condition of the hepatic artery, and chronic of the vena portæ ; Winslow asserted, that each has its origin in the ramifications of the vena portæ ; but it is easier in such matters to make assertions than to bring forward good proof. The truth is, that we are ignorant of the matter ; and although an interesting pathological question, yet it does not appear to me to be one of much practical importance, at least in the present state of our therapeutical knowledge.

*Symptoms of acute hepatitis.*—The acute and sub-acute varieties almost always commence with some chilly feelings, succeeded by heat of skin ; furred tongue having a yellowish appearance ; irregular state of bowels, the stools being generally costive, like whitish clay, or dark-colored at first, and assuming the whitish appearance as the disease advances. Sometimes there are vomited and passed by stool, considerable quantities of dark-colored matter, occasion-



ally resembling grumous blood; but this generally takes place, it would appear, when there is great congestion of the liver, and also of the vessels of the mucous membrane of the intestines. The urine is scanty and very dark-colored; the skin hot, dry, and harsh; there are some degree of dyspnoea and anxiety of countenance, together with nausea and vomiting, and considerable thirst. The pulse is sometimes, but not always, quick, strong, and hard. In the most acute form, the pain in the region of the liver is severe, increased on pressure, accompanied by swelling and tension of the abdomen; pain is often experienced about the tip of the right shoulder, which is supposed by many to be pathognomonic of an affection of the liver; but nothing is more deceptive. This complaint, whether slight or severe, is liable to be mistaken for affections of the neighboring viscera, and more particularly of the serous membranes which cover both surfaces of the diaphragm, as well as inflammation of the lower lobe of the right lung. These are attended by some degree of cough, which, in many cases of hepatitis, is a marked symptom. A yellow discolouration of the skin, known in common language by the term of jaundice, occasionally takes place in hepatitis, as does hiccup; but neither the one nor the other, nor both conjoined, can be said to be symptoms peculiar to hepatitis. When the inflammation affects the peritoneal coat of the liver, the pain is much more intense, generally speaking, and the fever higher, than when confined to the substance of the liver. Nothing is more unsatisfactory than the result of external examination, made to ascertain the condition of the liver when suspected to labor under disease. The contraction of the muscles of the abdomen; distension of the colon or stomach; disease of the kidneys; a collection of matter in the thorax, pressing down the diaphragm, are all sources of deception. The patient is to be placed in such a posture as will relax the muscles of the abdomen, which will be best effected when lying in bed with the head and shoulders well elevated by means of pillows, and the knees drawn up towards the abdomen. In this position, the examination is to be made; percussion is to be employed, to inform us whether there is any flatulent distension; and the patient should be fasting. He should be told to take a full breath, when pressure is to be made in the region of the liver, while the lungs are yet distended. With all these precautions, little satisfaction will in general be obtained from the examination, unless the liver be very large, because the right lobe is the part most frequently affected, which is concealed by the false ribs. The stethoscope will afford satisfactory negative information respecting the condition of the lungs. In the acute disease the patient may die either from the rapid destruction of the liver, or from the extension of the inflammation to surrounding parts.

*Symptoms of chronic hepatitis.*—This disease is very slow and insidious in its progress, and uncertain in its termination. There is a dull dragging pain in the right hypochondrium, increased by any considerable exertion, attended occasionally by feverish symptoms, and a dry, parched skin, irregular bowels, scanty high-coloured urine, tympanitic distension of the abdomen, sallow countenance, and frequent attacks of jaundice. The pulse is not much affected,

perhaps for some time. On many occasions the patient is cut off by an acute attack of inflammation in a part of the liver which had not perhaps been previously involved in the disease, or from peritonitis, or from inflammation of the lungs or pleura. There is also pain in the shoulder, and sometimes a weakness of the right arm; the tongue is scarcely ever free from yellow fur, the appetite is bad, and an eruption very often attacks the face, and back, between the shoulders, generally in the form of acne; the patient passes bad nights, although he may be able to attend to his ordinary affairs through the day. In the chronic diseases the patient may die dropsical, or sink under acute inflammation of the peritoneal coat.

*Appearances on dissection.*—The following are the appearances most frequently found in acute cases of hepatitis. Adhesions between the liver and surrounding parts; fulness or enlargement, the organ having lost much of its elasticity, easily broken down between the fingers, its edges thick, and more rounded than natural. The colour will depend much upon the quantity of blood in the vessels of the organ; but in general it will be of a brighter red in the inflamed portions. It must, however, be kept in recollection, that venous engorgement produces discolouration of the liver, and sometimes reduces it into a pulpy state. In either case, the distinction between the red and whitish yellow parts of the liver is destroyed. In those affected with jaundice, the colour of the liver will have a similar tint. The termination by abscess is by no means rare in tropical climates, and it is sometimes seen in this country, although I believe, that tubercular degeneration in a state of softening, is not unfrequently mistaken for abscess. This termination of hepatitis in the formation of abscess, is, however, not always fatal. The matter escapes in various ways—1st, externally through the parietes of the abdomen, by the intervention of adhesive inflammation between the peritoneal surfaces. 2d, It has been expectorated, after finding its way through the diaphragm into the substance of the lungs. 3d, It may find its way into some part of the intestinal tube, and pass off by stool. I have seen instances of all these terminations, the patients recovering partially but never completely, although permanent cures are said to have taken place after such events. The matter has escaped from the liver into the cavity of the abdomen,—into the thorax—the gall bladder. Andral alludes to a case, in which the abscess of the liver communicated with the interior of the vena cava, and another with the pericardium.

Mortification is, I believe, unknown as a termination of hepatitis; it is often mentioned by the older writers, who called every part which was dark-coloured and soft by that term.

Under the sub-acute and chronic form of hepatitis, there are perhaps a greater variety of morbid appearances. The following are the principal alterations observed, viz., enlargement; hardness; contraction; (atrophy;) granulous appearance increased, sometimes diminished; red parts increased, and whitish-yellow parts diminished, or *vice versa*. We sometimes see the liver variegated green;

a brick colour; sometimes there are darkish red bodies in a yellowish ground, or yellowish bodies in a red ground, at others greenish bodies in a bright yellow ground. The whole liver is sometimes converted into a diseased mass, the surface of which looks of a mottled green, with projections from its surface, of different sizes; a section produces a thick tenacious bloody exudation, and when wiped away, leaves the surface of a curious variegated appearance, containing spots, some the size of a half-crown, others smaller than a sixpence, of a yellow colour, streaked with red and white lines, each spot appearing to have a distinct centre, with red and white lines running towards the circumference. In a case of this kind, of which I have drawings, the cystic duct was destroyed, the gall bladder much distended with dark-coloured viscid bile, and its coats greatly thickened. In many cases of chronic inflammation of the liver, I have distinctly traced increased vascularity in the vena portæ and its branches, together with thickening of the coats of the vessels to such a degree as to resemble layers of cartilage. Similar appearances are to be observed also in the lower animals.

*Causes.*—There can be no doubt that the disease is more frequent in warm climates than in this country, and still more so in the East Indies than the West; which shews that heat alone is not a specific cause of hepatitis. Indolence, along with full living on high-seasoned food, and a neglected state of the bowels, are the principal causes, I imagine, of hepatitis in all climates; and when to these are added high temperature, atmospheric vicissitudes, and constant and copious perspiration, it is no wonder that the disease should be very prevalent among Europeans in India. In this country, dram-drinking is an alleged cause; but in my experience, this pernicious habit produces disease of the stomach more frequently than of the liver. A congested state of the vessels of the liver must also tend to produce inflammation of its substance; hence it often succeeds to intermittent and remittent fevers. Various other causes have been assigned; but for these, and for many valuable observations, the reader is referred to the various works published by authors who have had the charge of sick in India. My experience leads me to believe that women are more liable to diseases of the liver than men in this country; and it is known to be a frequent consequence of chronic phthisis.

*Treatment.*—The more intercourse I have with intelligent practitioners who have been in India, the more I am convinced that the action of mercury has been too much trusted to, to the neglect of the lancet, and particularly of local bleeding; and that drastic purgatives are too much in use. Therefore I would recommend the lancet, in the early part of the disease, to be used with decision; but if it be too far advanced, the application of leeches may be trusted to, together with gentle laxatives, frequently repeated, assisted by injections. I have a high opinion also of long continued counter-irritation; but to act beneficially, it must be persevered in, and assisted from time to time by local abstractions of blood. Occasionally the solution of tartar-emetic may be given if the stomach be not already in a too irritable condition; mercury may be used, as a powerful assistant to these means, rather than as the principal remedy; perhaps it may

be found in such cases to be more useful in restoring the proper functions of the liver, after diseased action has been reduced, than in reducing that action itself. The warm bath is to be frequently employed. The diet should be of the blandest description, and the patient must avoid fatiguing exercise, particularly on horseback, for a considerable time after his convalescence.

When the disease is severe in India, removal to a colder climate is considered very essential, and remarkable recoveries have taken place during the homeward-bound voyage.

It must not be supposed, from my statement regarding the limited use of mercury, that I have joined the standard of those, who pertinaciously resist the employment of mercury in all diseases, and who insist that every little eruption, or accidental disease of a bone, or chronic ulceration of the throat, is produced by the action of mercury, although the individual may not have taken a grain of it for twenty or thirty years.

It is said that mineral waters, as those of Cheltenham and Harrowgate, are found exceedingly useful in diseases of the liver, as also the nitro-muriatic acid bath; and I think benefit has been derived from the use of iodine, but it becomes me to speak doubtfully respecting these remedies. Chronic hepatitis, and other diseased states of the liver, are to be treated pretty nearly upon the same principle; except drawing blood from a vein, which is rarely called for; whereas the action of mercury is likely to be more beneficial than in the acute forms of the disease.

I have a few words to say respecting scirrhus of the liver and tubercular formation. The true scirrhus of this organ is, I imagine, as rare as mortification, and as a congested appearance is often mistaken for mortification; so is tubercular formation for scirrhus. A diseased state of liver, corresponding to scirrhus in other organs, is, however, occasionally seen, and is to be distinguished by its indurated condition, and its white bands. Another appearance similar in every respect to medullary sarcoma is occasionally observed, of which I have seen two or three instances, and possess a drawing taken from one case.— Sometimes, tubercular formation may be traced, extending from the peritoneum into the substance of the liver; the peritoneum having a thickened, opaque and sometimes puckered appearance, occasionally contracted inwards, so as to give a resemblance of loss of substance from the dischargé of an abscess. On some occasions, the tubercular masses project from the surface of the liver, producing a lobulated appearance. Sometimes, however, the peritoneum looks perfectly healthy, although there may be considerable enlargement of the organ itself; and when cut into, large tubercular masses are discovered, sometimes near the surface, at others deep seated, which look yellow, and resemble the general tubercular infiltration which takes place in the lungs. The liver is sometimes found studded with yellow bodies of different sizes and shapes. The organ is of a reddish tint, and these bodies look like yellow wax sunk into the texture. They are not like tubercles. Andral considers that they are merely the white substance in a state of hypertrophy. Laennec believed them to be an



accidental tissue found in the liver, and termed the disease *cirrhosis*. Sometimes the peritoneal coat only is studded with tubercles of the miliary kind, in various degrees of progress, some being quite vesicular, and others crude.

We sometimes meet with a liver of a pale or bright yellow colour, exceedingly soft and tender, containing a large quantity of oil. This is called the fatty liver, and although most frequently seen in phthisical subjects, is yet met with when the lungs are not diseased. A liver in this condition, looks, when superficially observed, of one uniform colour, but when minutely examined there will be seen minute brown, red or greenish spots or lines on a yellow ground. Sometimes the fatty liver does not exceed the natural size, at others it is greatly enlarged. I have seen one so large that its inferior margin extended rather beyond the brim of the pelvis. Another weighed nearly 16 pounds; large sections of this liver floated even in strong alcohol. Sometimes the fatty matter is not universally infiltrated through the liver, but deposited in small masses here and there.

A preparation of a diseased liver was presented to me some time ago, in which there was a large effusion of lymph thrown out between the diaphragm and the liver, with adhesions round the edges, which closely resembled a tuberculated liver.

Cysts containing hydatids are sometimes found in the substance of the liver, sometimes two or three in number, containing large quantities of these vesicular bodies. Various opinions are entertained respecting the origin of hydatids, but after an attentive consideration of the whole subject, and a minute examination of the bodies themselves, I think they are not animals, but ought to be regarded as diseased products like tubercles.

#### JAUNDICE.

It has been already stated, that jaundice is not an invariable attendant on hepatitis. It would seem occasionally to depend upon disease of the biliary ducts, perhaps inflammation; we know that it is sometimes occasioned by obstructions of various kinds,—as thickening and obliteration of the ducts, and during the passage of gall stones. I have seen jaundice, where no morbid appearance or mechanical cause of obstruction could be discovered after death. It must be confessed, that much remains to be done, both in the physiology and pathology of the liver. Jaundice may be produced, however, by one or other of the following causes: diminished secretion of bile, greatly increased secretion, viscosity of the bile itself, acute or chronic disease of the liver, inflammation and obliteration of the biliary ducts, obstruction from gall stones, and possibly, by spasm of the ducts.

*Phenomena.*—Jaundice takes place, as has been already stated, as an occasional symptom of hepatitis; but sometimes it occurs suddenly in cases where there could have been no acute action, or disorganization of any kind, and preceded by languor, some degree of restlessness, diminution of appetite, and other symptoms which attend indigestion, nausea, vomiting, and dull pain, or sense of

weight in the right hypochondrium. The tongue is generally furred and yellow; the urine is scanty, commonly of a deep yellow, sometimes tinged green, and occasionally like the grounds of porter; bowels slow, and the evacuations whitish. The tinge of the skin is sometimes preceded by a tingling or itching of the whole body, and the colour of the surface is various, from that of pale citron, almost to black. The conjunctiva of the eye partakes also of the colour. Occasionally there is some fever, and the nights are disturbed. Jaundice sometimes comes on insidiously; at others, suddenly. Thus I have known a man sit down to dinner in tolerably good health, and be soon obliged to retire, from feeling indisposed, with his whole surface suddenly tinged; the first circumstance which excited attention, was a remark which fell from himself, that the table-cloth was of a greenish colour. This observation leads me to remark, that I have known several individuals who saw every object discoloured.

*Treatment.*—The treatment of jaundice is not well understood. When it accompanies disease of the liver, it must be treated as a symptom; if it seem to proceed merely from functional derangement, the warm bath, one or two emetics, and continued laxatives, should be employed, together with a gentle course of mercury. If there be pain, the application of leeches may be necessary, conjoined with counter-irritation. Great attention must be paid to the diet also, which may be more or less antiphlogistic, according to the urgency and duration of the symptoms. The nitro-muriatic acid bath has appeared to be serviceable in many cases.

## GALL-STONES.

As long as gall-stones remain in the bladder, they seem to be productive of little annoyance. I once found two hundred and forty in the gall-bladder of a subject, whose history was not known; but on several occasions, I have met with them after death, in which no suspicion of hepatic disease had existed. Sometimes there is only one calculus, which fills, or nearly fills, the gall-bladder; and I owe a very splendid preparation of this kind to the kindness of Dr. Combe and Mr. Cheyne, of Leith.

Gall-stones create pain, it would appear, only when they are in the act of passing towards the intestine. Under such circumstances, the patient is seized with violent paroxysms of pain, during which his sufferings appear to be as great as any human being can well endure; he ascribes his sufferings to spasms. The abdomen is sometimes painfully distended by flatus; it is very curious, however, that the pulse frequently remains quite natural, although sometimes it is rather accelerated.

*Treatment.*—We have to direct our attention, in this case, to moderate symptoms. Sometimes bleeding will be productive of relief; in others, it does not seem in the least to mitigate the patient's sufferings, but I conceive it to be good practice to open a vein, in a strong, plethoric person. The warm bath, and hot fomentations, are to be frequently employed. Large doses of opium are to be

exhibited, and the bowels must be carefully and daily attended to. It may be mentioned also, that leeching and cupping are sometimes necessary.

#### INFLAMMATION OF THE SPLEEN.

It is not easy to determine when the spleen is inflamed, indeed I should say almost impossible; for when found diseased on dissection, there have been no symptoms during life, which could be said to indicate disease of this organ, more than any other in the abdomen. In all probability this matter is not likely to be discovered, until we know more of the physiology of this organ. It is occasionally found diseased in this country, but still oftener in warm climates, more particularly in situations where intermittent fevers prevail. It has been known to weigh above eight pounds; sometimes it is hard, but most generally we find it, when diseased, soft like a coagulum of blood; it is in such circumstances that the erectile tissue is best seen, a fine specimen of which is in my museum. The spleen, like the liver, is also subject to the formation of tubercles, both in its substance and capsule. In two or three cases of tuberculated spleen, which were examined minutely, I found the tubercles almost spherical, each inclosed in a capsule.

Some time ago, a preparation was presented to me, of a large abscess in the spleen, the walls of which were partly formed by the stomach and diaphragm. In the centre of the abscess, a portion of spleen, the size of a large nut, was found quite detached. In the thorax, the pleura covering the corresponding part of the diaphragm was inflamed, and the inferior surface of the right lung adhered. In this case, there were no symptoms to shew that the spleen was affected. The patient died after amputation of the leg, which was performed with great reluctance, after the occurrence of mortification, as the only chance of prolonging life—extensive disease of the arteries was discovered. There is a splendid dried preparation in my museum, showing the state of parts.

Inflammation of the spleen is *said* to be recognized by heat, fulness, and tenderness in the proper region, with pain on pressure; for instance, Cullen has given the following definition: Pyrexia, tension, heat, tumour, and pain in the left hypochondrium, increased by pressure, without any signs of nephritis."

Discharge of livid blood from the stomach and bowels has often been observed during life, in cases where extensive disease of the spleen was afterwards discovered on dissection; but the same thing happens from other causes.

*Treatment.*—In India, it is alleged, the native doctors treat enlarged spleen by external irritation, acupuncture, and scarifications.

General and local bleeding, the warm bath, laxatives, and blisters, are to be had recourse to, as the urgency of the symptoms demand. Pain is to be allayed by opiates.\*

\* In proper order, diseases of the pancreas ought now to be described; but as affections of this organ are obscure, and as I am not aware of any symptoms by which they can be detected, I shall take the liberty of passing over the subject.

## PART III.

---

DISEASES OF THE ORGANS CONNECTED WITH THE RESPIRATORY  
SYSTEM.





## CHAP. I.

### GENERAL REMARKS ON DISEASES OF THE RESPIRATORY SYSTEM.

---

IN approaching the subjects which are to be treated of in this part of the work, I gladly seize the opportunity of expressing the greatest admiration of the talents and powers of observation of the late M. Laennec, and of acknowledging that he is the individual of this age to whom the science of medicine stands most deeply indebted. I know not which to admire most,—the extreme patience with which he carried on his investigations in diseases of the chest, or the zeal and tact which he displayed in surmounting the obstacles which must have daily come in his way.

The diseases of the chest were once the opprobrium of medicine; and although we are still liable to be mistaken, yet by percussion and auscultation, we are enabled to judge correctly of the nature and seat of some affections, which otherwise would be mere matter of conjecture.

It is scarcely more than half a century, since Abvenbrugger suggested the probability of ascertaining the state of the organs within the throax, more perfectly, by percussing the chest with the points of the fingers. M. Corvisart translated Avenbrugger's Treatise into French, and subsequently brought the practice of percussion into general use and great repute. It must be confessed, however, that percussion is a much less satisfactory practice than auscultation, either with or without the stethoscope, which instrument is the invention of Laennec, and which is now too well known to require any description in this work.

A great deal of opposition has been made, and many frivolous objections have been urged, against the employment of auscultation, principally by three classes of practitioners. *1st*, Those who are too well employed, and who have not time to learn any thing new. *2dly*, Those who are dull of hearing, or devoid of the power of discriminating between sounds which have some resemblance to each other. *3dly*, Those who are too indolent or too old.

With respect to the first class, I need not say much, as no observations of mine will improve such medical men, by inducing them to pay more regard to

the science than to the trade of the profession. But as to the second class, I have only to observe, that it is too bad for men who are deaf, to decry the employment of a means which is found to be so advantageous in practice; and the only method by which they can be silenced, is for others to state their defect,—a task, which, though ungracious, I shall not shrink from performing in respect to those whose statements are likely to influence the too numerous “herd of imitators” in the profession. In this class, there are some who can hear perfectly well, but who, from the want of what is called a musical ear, are incapable of discriminating sounds, in the same manner as some are unable to detect the difference between a hard and a soft pulse, or a full and a sharp pulse; or as others who, from a defect in the organs of vision, cannot see any thing twenty yards distant. Such individuals, then, will never be capable of availing themselves of this additional means of investigating diseases of the chest; but they have no right to predjudice others in the profession, who are perhaps too happy to avail themselves of any excuse which is likely to save trouble. In the third class of objectors, I have placed the indolent and the aged. With respect to the first of these, I have to remark, that the public have not so much to complain of the ignorance of medical men, as their indolence and want of zeal; and it is as difficult for a camel to pass through the eye of a needle, as to make an indolent physician active and zealous; therefore it is not to be wondered at, that they should advocate the advantages of remaining ignorant. As for many of the aged opponents, they act, no doubt upon the principle which is observed in old dogs, of not learning new tricks. Before quitting this unpleasant part of the subject, it is proper to impress on those who are fond of indulging in sarcasms against the cultivators of pathology, that ridicule is not argument, and that perfection is scarcely to be expected from auscultators, any more than from others in the profession. It is also very unwise in any lecturer to decry auscultation, and to bring forward solitary instances of mistakes made by those who use the stethoscope, or pretend to use it, in the investigation of diseases of the chest. It is not very prudent in any one to run the risk of instilling bad principles into the minds of students, by recommending them to make a show of using the stethoscope in practice, and “thereby pretend to see as far into the heart of a stone as their neighbors.” What would be said by such an individual, if the mistakes made by medical men in practice, were brought forward by those inimical to the profession, in proof of the inefficacy of physic and surgery! I have seen the wrong leg amputated by mistake, and the operation of lithotomy has been frequently most cruelly bungled; yet no one is entitled, from the knowledge of many such facts, to say that surgery is altogether useless, or that there are not some clever surgeons.

Some individuals have stated objections against the use of the stethoscope; they say it requires a lifetime to arrive at any thing like perfection. I have already shown that it requires great patience and good ears to learn it at all, and that those who possess neither the one nor the other, will never be able to use it advantageously. But if the difficulties of any task were allowed as an argu-

ment against making attempts to overcome them, it may be asked, what would become of all the sciences?

They also state, that it is indelicate to examine the chest of a female with this instrument under any circumstances; and that it frequently cannot be done, in consequence of the fatigue it occasions to the patient. With respect to the first, I have to observe, that it is an objection which I should have expected from one individual only in the British Empire—Sir Anthony Carlisle. I feel convinced that every professional man of experience will join me in the following statement, that fewer objections are started by females possessing delicate and innocent feelings, to any kind of examination which their medical adviser may think it necessary to propose for their advantage, than by those who unfortunately are differently constituted. It is to be lamented that this objection is brought forward more in the spirit of special pleading, than with a view to benefit either science or good morals. It may be maintained, however, with truth, that the examination may be made in such a manner as not to occasion the slightest blush, as the patient need never be exposed, the different sounds of respiration being sufficiently audible for all useful purposes, through the texture of an ordinary night-gown. Instead of meeting with objections on the part of females, it has always occurred to me to observe not only a readiness, but an anxious desire, that the investigation of the nature and seat of any disease in the chest should be carried out to the most complete elucidation. Cases no doubt occur, in which it is inconvenient and painful to move the patient much; but these are comparatively rare, and must be so far disregarded when life is at stake.

I shall now turn to a more agreeable part of the subject, by shortly stating a few cases, shewing the advantages derived in actual practice from auscultation. A few years ago, I was requested to see a patient who had been under the care of several medical men, and by way of giving me every necessary information, his friends put me in possession of all the recipes which had been recommended;—they would have made a moderately-sized quarto volume. At one time, it was supposed that he had stomach complaint, and all known tonics were prescribed; at another, it was supposed to be scrofula, for which he took large quantities of the muriate of lime; at last, he was suspected to have diseased liver, and he got large quantities of mercury, and was several times completely salivated. Upon applying the stethoscope, I discovered a cavern in the superior lobe of the right lung, and was doubtful whether another did not exist in the left. Next day, I had the advantage of a consultation with Dr. Scott, whose superior knowledge of diseases of the chest and stethoscopic tact, I am happy to have this public opportunity of acknowledging. He was merely asked to see a patient with me, without knowing the result of my previous examination, which he confirmed, with this addition, that he had also no doubt of the existence of a cavern in the left lung; and it was afterwards proved to be correct. A remarkable case occurred to me some years ago, at a time when I was only beginning to make some progress in the use of the stethoscope. A man pre-



sented himself, with many of the ordinary symptoms of indigestion, and without a single sign indicative of disease of the lungs. I examined him carefully with my ear, with a view of perfecting myself in the natural sounds elicited by respiration, and the tones of the voice, when, to my astonishment, I thought I discovered a small cavern in the superior lobe of one of the lungs. At that time, Dr. Wavel, an excellent stethoscopist, was a pupil at the dispensary. He was requested to examine the man, without being made acquainted with my suspicions. Upon comparing notes, he was of the same opinion. It was subsequently discovered that the man coughed a little in the morning, but not so much as to attract even his own attention; upon dissection, some months afterwards, our diagnosis was fully verified.

Dr. Henry of Manchester, and others, will not forget the case I had occasion once to examine with him, in which we discovered empyema of the left side of the thorax, which had been treated for disease of the heart, because the pulsations were felt to the right of the sternum, instead of the left. By auscultation and percussion, we were enabled to state most confidently that there was extensive effusion, which pushed the heart to the other side of the chest. The patient did not survive above a fortnight afterwards, and the correctness of our opinion was fully proved, by the existence of an immense effusion in the left side of the thorax, amounting, I believe, to twenty or twenty-six pounds of fluid, with large masses of lymph.

Liver complaints are often confounded with disease of the lungs, in which it is of the greatest consequence to the patient, that the physician should be able to form a proper diagnosis, which he cannot do in many cases without the assistance of auscultation and percussion. A case of this kind once fell under my notice. A physician treated a patient during some time for a pulmonic complaint, without knowing its exact nature or seat, which he could not fail to have discovered, had he been able to use the stethoscope. After a little time, the patient complained of uneasiness in the abdomen, and the liver was felt rather prominent on the right side, but pressure did not aggravate the symptoms. It then came out that the man had been in India for several years, and as that was the case, it was supposed he could not fail to have drank plenty of arrack, and consequently to contract an affection of the liver. He was accordingly salivated over and over again, but the enlargement continued to increase; and it may be briefly stated, that the man died. Upon dissection, his liver was perfectly sound, and it was found that the protrusion was occasioned by an immense effusion into the left side of the chest, which pressed down the diaphragm, and encroached upon the abdomen.

By auscultation and percussion, we shall be always able to discover the existence of collections of fluid in the chest, which by ordinary symptoms cannot be ascertained. Dr. George Gregory, a late writer on the practice of physic, in his article on hydro-thorax, or dropsy of the thoracic cavity, (627, ed. 1825,) states as follows: "*The diagnostic symptoms of this form of dropsy are very fallacious. Sometimes we are confident of finding water in the thorax, when*

*that cavity is perfectly free from disease. At other times, we observe the thorax full, when we had no suspicion of the complaint existing."* I have no doubt, after writing this paragraph, the author applied himself most assiduously to the acquirement of stethoscopic knowledge, without which no man can treat diseases of the chest with any confidence.

It is well known, that there is a great resemblance between the ordinary symptoms of inflammation of the pleura, and a painful affection of the intercostal muscles, which is called pleurodynia; the resemblance is so great, that it is impossible to distinguish the one from the other without the use of the stethoscope. Not long ago, I had three such cases within a short space of time; one only proved to be pleurisy, and that was the one in which I least expected to find it, from the slightness of the ordinary symptoms.

I have seen many remarkable cases of chronic inflammation, and I believe extensive ulceration in the wind-pipe, which the ordinary symptoms announced to be the most hopeless cases of phthisis pulmonalis;—there was cough, expectoration tinged with blood, emaciation, debility, rapid pulse, with bad feverish nights, attended by profuse perspiration. By the sound of the respiration, and the resonance of the voice, I was enabled to assure myself that the lungs were as yet sound, and they were all cured by means to be afterwards described in the proper place. Every year I see several cases of chronic bronchitis, which have been mistaken for phthisis, many of which were cured or relieved by the appropriate remedies, which must have terminated fatally if managed as cases of phthisis. In the treatment of inflammation of the substance of the lungs, it is of the utmost consequence to be able to tell whether the disease be extensive or not; whether it be in the first stage, that of active sanguineous engorgement; or in the second, that of solidification; whether the disease is advancing or declining, which can be done by no other means than auscultation and percussion.

It has already been attempted to be shewn, of how much advantage it is to sound the chest in cases of fever.

Much injury it is to be apprehended, will result for some years to come, from individuals pretending to use this instrument, and pronouncing confident opinions as to the nature and seat of diseases, who are unacquainted even with the natural sounds of respiration, and who, as I have often seen, do not really know how to hold the stethoscope. Few individuals can acquire the power of using the instrument advantageously from books, without the personal assistance of some one already instructed; and I have known several gentlemen give up the task as hopeless, because they could hear nothing at all, but who resumed it, upon being properly assisted and instructed.

On the other hand, candour compels me to mention, that much mischief has been done by some able stethoscopists pretending to do too much; according to them, auscultation is infallible; but that this is not to be expected from any human invention applied for the purpose of investigating or curing diseases, I need not waste time to prove. That it is a *great assistance, as an additional*

*means of diagnosis* in diseases of the chest, no man possessed of the spirit of truth, who has fairly given it a trial, or who has followed the practice of those who can avail themselves of auscultation, will deny. I maintain, without the fear of contradiction, that perhaps one of the greatest advantages to be derived from auscultation, is that which enables us to obtain negative proof, in cases where we have failed in discovering positively the seat of the disease. For example, if a medical man be called to a case which has either been pronounced to be consumptive, or in which a doubtful opinion has been given, it is truly delightful for all parties, if he be able to give a positive assurance that the lungs are not affected, although he may not be able to tell exactly the seat of the disease.

Some medical men allege, that they can discover every condition of the lungs, quite well enough for all practical purposes, by ordinary symptoms; therefore I shall now take a view of these symptoms, for the purpose of shewing the fallacy of this statement. The following symptoms are supposed to denote inflammation of the lungs, in the most satisfactory manner: cough, dyspnoea, pain in the thorax, quick and strong pulse, being softer, however, when the bronchial membrane and substance of the lungs are inflamed, than the pleura. When these symptoms exist, they are supposed to be peculiar to inflammation of the lungs; that is to say, when they exist, inflammation is present, and when they do not exist, the disease is absent. Experience enables me to state, that not one of these symptoms, or all taken together, indicate inflammation of the lungs in any of its textures, and that inflammation may exist without any of them being well marked; hence it is, that physicians are so often astounded with the appearances on dissection, which they did not anticipate from the mildness of the symptoms; and hence it is, they too often decry the usefulness of morbid anatomical inquiries.

Cough is not peculiar to disease of the lungs, it may be produced in a violent degree by any kind of irritation about the larynx, epiglottis, and even the pharynx; mere excitement of the circulation frequently produces cough, as well as diseases of the heart. I shall afterwards prove, that in some of the most hopeless cases of inflammation of the lungs, the patient *cannot* cough, in consequence of which the danger is greatly increased; therefore cough cannot be said to be peculiar to inflammation of the lungs.

Dyspnoea is as frequent a consequence of disease of the heart, as of the lungs; mere excitement in the circulation will produce dyspnoea. One of the most distressing cases of dyspnoea which I ever had the misfortune to witness, dissection proved to depend on an enlargement of the gland, which fills up the angular space at the bifurcation of the bronchial tubes. From a mechanical cause, also, œdema of the inferior aperture of the glottis frequently produces a fatal dyspnoea. In many cases of extensive and severe inflammation of the bronchi, after free expectoration, the dyspnoea subsides so completely, that should a symptomatical physician happen to make his visit at that period, he will pronounce the patient to be convalescent, when perhaps within an hour or

two he will be no more. Even in pneumonia, if the inflammation be confined to a small part of one lobe, which it frequently is, there is little dyspnœa; and the whole of one lung may be destroyed by chronic inflammation, without occasioning much difficulty of breathing, if the disease go on very slowly.

With respect to pain, nothing is more deceptive, for there may be severe pain in the chest without inflammation, as has been already stated with regard to the affection denominated pleurodynia. In bronchitis there is little or no pain; in pneumonia the pain is generally little marked; and, contrary to the statement made in all systematic works respecting the severe pain in pleuritis, experience enables me to state, that it may go on most extensively, even to a fatal termination, without much complaint; hence we often see on dissection, most extensive adhesions of long standing, between the *pleura pulmonalis* and *costalis*, in individuals who had never been known to experience any very serious indisposition till their last illness.

It has already been shewn, that a hot skin is not an invariable phenomenon in inflammation, and the same remark may now be made with respect to inflammation of the lungs; indeed, in bronchitis the heat of skin is frequently below par.

It has also been stated, that the pulse cannot be depended upon as a certain indication of inflammation; and in addition to the remarks already made in this work, I may now state, that hypertrophy of the left side of the heart frequently produces a strong bounding pulse, and also dyspnœa, when there is no inflammation going on in any organ of the body; and, on the other hand, dilatation of the ventricle will produce a weak, soft pulse, at a time perhaps when every form of pneumonic inflammation is going on most rapidly.

All Cullen's definitions, in the sixth chapter, which treats of pneumonic inflammation, are therefore erroneous, as well as the following paragraph, (p. 335.) "Pneumonic inflammation, however various in its seat, seems to me to be *always* known and distinguished by the following symptoms:—pyrexia, difficult breathing, cough, and pain in some part of the thorax." It will be admitted that Cullen was at least as wise, talented, and observant as any of his symptomatical brethren of the present day; yet he confesses that he could not ascertain the seat of the disease by the ordinary symptoms, as will be seen upon perusing the 334th paragraph. "Under this title I mean to comprehend the whole of the inflammations, affecting either the viscera of the thorax, or the membrane lining the interior surface of that cavity; for neither do our diagnostics serve to ascertain exactly the seat of the disease, nor does the difference in the seat of the disease exhibit any considerable variation in the state of the symptoms, nor lead to any difference in the method of cure." Proving by the latter part of the paragraph, that he must have been an indifferent practitioner, as the inflammatory affections of the lungs require a different treatment in each stage; bronchitis demands a different plan from pleuritis, and pneumonia from either of the others. I venture therefore to predict, that in a few years, practitioners, even those who now ridicule auscultation, will be compelled, in self-defence, to have recourse to this additional means of diagnosis, or they will lose their practice.



## CHAP. II.

### DISEASES AFFECTING THE MUCOUS MEMBRANE OF THE AIR-PASSAGES.

---

UNDER this title, I shall treat of catarrh ; Bronchitis ; inflammation of the larynx ; croup, and hooping-cough ; together with the affection which is sometimes known by the term crowing disease, at others spasmodic croup.

#### CATARRH.

WHEN a patient is seized with chilliness, followed by sneezing, slight fever, impaired appetite, hoarseness, occasionally loss of voice, and cough, he is said to have catarrh, or a common cold. The bowels are generally out of order, and he has an exacerbation at night. The cough is sometimes slight, at others severe. A slight degree of wheezing is heard, and the disease has a salutary termination in a few days, by expectoration of mucus, which is discharged by occasional fits of coughing.

Sometimes the disease is confined to the mucous membrane of the nose and frontal sinuses, and is known by the vulgar denomination of "cold in the head."

When catarrh is a general complaint, attended by considerable prostration, and constitutional symptoms which are otherwise slight, the disease has been denominated influenza. But it must be confessed, that after a careful perusal of all the accounts which have been given of the various epidemics of the disease called influenza, I am unable to draw pathological conclusions as to the exact nature and seat of the affection. This part of the subject must therefore be considered undecided, till further observation by auscultation and percussion enables us to determine.

In considering the pathological difference between catarrh and bronchitis, it must be recollected, that in both, the same membrane is affected, but in different parts ; I imagine, that in the former, the diseased action is a very slight sub-acute inflammation, affecting the mucous membrane of the nose, frontal sinuses, the larynx, and trachea. Slight cases of inflammation of the membrane lining the bronchial tubes, frequently pass also by the name of catarrh, instead of bronchitis.

*Causes.*—Exposure to cold, particularly alterations from heat to cold, with

insufficient clothing, is the chief cause of this complaint, as well as bronchitis. It would appear to be of no consequence how cold the air we breathe is, provided the surface of the body be properly protected; hence I believe, that bronchitic affections are, comparatively, of less frequent occurrence in very cold regions than in this variable climate.

*Treatment.*—We are seldom called upon to treat a simple catarrh, unless severe constitutional symptoms have been excited by some accidental cause, as constipation; a hard fit of drinking; or a load of indigestible food in the stomach; when an emetic, the antiphlogistic regimen, a proper course of laxatives, diaphoretics, and confinement to the house, will generally be all the treatment found necessary. It may be mentioned, however, that the warm bath ought to be recommended when it can be conveniently obtained.

We are sometimes consulted in consequence of the inflammation having extended into the air-tubes, and having become aggravated by exposure in cold damp weather, when we shall frequently find that the disease has already made great progress. This is particularly the case with the children of the poor, who are badly fed and clothed, and for whom little permanently effectual can be done.

## BRONCHITIS.

I shall treat of bronchitis in two forms, the acute and chronic.

Ancient physicians appear to have been unacquainted with the nature and seat of bronchitis, although many of them have recorded cases of the disease. Sydenham has described the affection, as it sometimes occurs, under the title *peripneumonia notha*; and it will be found, that most authors since his time have copied his description, still remaining ignorant of the nature of the affection. Hoffman's *catarrhus suffocativus*; Lieutaud's *fausse peripneumonie*, and *catarrh suffocante*; Sauvage's *rheuma catarrhal*, do not differ from Sydenham's *peripneumonia notha*. Morgagni, who may justly be regarded as the first, and one of the most successful cultivators of morbid anatomy, seems to have been in some measure aware of the nature of the chronic form of this disease, and he has given ample proof, in his second book, that he knew it had been confounded with phthisis.

Cullen has given a good description of the symptoms of the disease, under the term used by Sydenham, *peripneumonia notha*, but has not added any thing to our knowledge upon this subject; and moreover he entertained erroneous notions of the true nature and seat of the disease. The same remark may be made respecting the later work of Dr. Mason Good.

The profession stands indebted to Dr. Badham, now professor of the practice of physic in the university of Glasgow, for pointing out the nature and seat of the disease in a little work he published on bronchial inflammation many years ago. Before the appearance of this work, the disease was very imperfectly understood by the best physicians of the day; and even now, it is

surprising that bronchial inflammations are so much neglected, particularly in fevers, rheumatic, gouty, and erysipelatous affections, as well as in the course of surgical practice.

Pure surgeons (by which I mean surgeons who pride themselves upon their powers of cutting, and boast of their ignorance of every thing medical,) should be told, that they frequently submit patients to capital operations, who are at the same time labouring under extensive inflammation of the mucous membrane of the lungs, perhaps in a sub-acute form, and which does not give rise to symptoms sufficiently violent to attract the attention of their surgical minds. They become worse from the progress of the disease, or in consequence, very probably, of the agony and fright experienced during the period of a painful and tedious operation. The pulse becomes weak; the skin cool; the face either very pale or somewhat livid; and the wound of course, puts on an unhealthy appearance,—adhesion by the first intention does not take place, and at the first dressing, the lips of the wound are found gaping, discoloured, with a foul discharge. In such cases patients are too often drenched with wine and bark, and crammed with stimulating food, under the idea of preventing debility and putridity. Notwithstanding these remedies, the strength fails, and gin and brandy are in vain had recourse to; the destruction of the parts in the neighborhood of the wound takes place, and the patient dies from presumed gangrene, which is too frequently attributed to the bad air of the hospital. I do not mean to assert, that all cases which go wrong after surgical operations, are owing to bronchitic inflammation; but I maintain that many are, and particularly the cases in which erysipelas follows. But I will say more on this subject when treating of erysipelas in the second volume of this work.

*Symptoms of acute bronchitis.*—The symptoms excited by inflammation of the mucous membrane lining the bronchial tubes, vary according to the severity and extent of the inflammation. The tubes of one lobe may be affected, when the symptoms will be slight; the inflammation may be still more extensive, affecting perhaps both lungs, and the symptoms will be slight also if the diseased action be but moderate.

The acute form of the disease, which I am now to describe, commences with some degree of chilliness, succeeded by pyrexia, hoarseness, dyspnœa, and a dry cough; tightness, or sense of stricture in the chest, and oppression at the præcordia; prostration of strength; loaded tongue and costive bowels. An exacerbation is almost always observed at night. In a day or two, expectoration takes place, which relieves the patient for the time; the respiration, however, becomes more difficult, but the cough bears no proportion to the dyspnœa; the tightness about the chest is increased, along with a sense of suffocation, when the pulse becomes very rapid. The deadly paleness or lividness of the lips and cheeks becomes more apparent; the countenance more and more anxious; and the patient frequently requests to be raised, and to have more air. A loud wheezing may now be heard, even at a distance from the bed-side. The voluntary muscles of respiration are brought into play. The patient becomes in-

sensible ; rattling is heard in the throat ; the extremities and face become livid, a cold perspiration bedews the skin, and death soon closes the scene.

Sometimes cerebral symptoms take place, and head-ache is much complained of, which may be attributed to impeded circulation in the head. The wheezing is produced by the air passing through the diseased secretion in the air-passages, and may be heard by placing the ear to the chest, long before it becomes so severe as to be distinguished by any other means.

The cases of acute bronchitis most to be dreaded, are those in which, the oppression in the chest being more or less considerable, there is neither heat of skin, pain, nor much febrile movement in the pulse. In fact, these three symptoms may be said to be below par ; no alarm is taken till suffocation is threatened, or some organic lesion has been produced ; and when at length the signal of distress is displayed, it will be found too late to save the patient.

The disease is very fatal in infancy and childhood ; and I shall now mention its course and progress at these periods of life. It commences in the same manner as in adults, like a common cold. The breathing becomes oppressed ; all the voluntary muscles connected with respiration are called into play ; the shoulders are in constant motion as well as the nostrils, and the abdomen becomes more prominent, by the increased action of the diaphragm during inspiration. Sore throat frequently accompanies the disease, and the child suffers so much pain during the act of coughing, that an attempt is made to suppress it ; wheezing soon takes place, which is more decided than dyspnoea ; expectoration is generally followed by mitigation of suffering, which continues for a longer or a shorter period, till more phlegm is formed. The mucus secreted in the air-passages, is frequently discharged by spontaneous vomiting, exactly as occurs in whooping-cough. Children under four or five years of age, can rarely be made to spit up the phlegm, unless assisted by the act of vomiting ; but they swallow it after it has been discharged from the air passages. Children refuse food, but drink greedily until the disease is far advanced, when they cannot take a long draught from want of breath. An infant at the breast sucks pretty well during the first stage of this affection ; but subsequently, although it seizes the nipple with avidity, it cannot suck for any length of time together, perhaps not for more than ten or fifteen seconds, when it will be observed to bite the nipple very forcibly, and discontinue sucking ; it will cry, and be observed to throw its head back quickly, and will continue in this position for some time, even after the cough has produced the expulsion of the mucus.\* If the disease remain unsubdued, the dyspnoea increases ; the face shews the usual marks of impeded circulation ; the surface becomes cold ; the extremities sometimes swell, and the child dies from suffocation. Very often, the sound of the voice and the cough are as shrill as in the croup, with which disease bronchitis is sometimes confounded. Dr. Hastings, in his very excellent work on the lungs, has given a concise account of a variety of acute bronchial inflammation, to which young children are peculiarly subject, which I have often had occasion to see. Al-

\* This position seems to facilitate the passage of air into the lungs.



though more dangerous, the symptoms are not of corresponding severity; in truth, it is a sub-acute inflammation of the bronchial membrane throughout the whole extent of both lungs. No severe symptoms are excited as long as expectoration continues free, and is discharged with ease; but should the mucus by any accident increase, the cough at the same time ceasing, speedy death from suffocation inevitably follows, unless vomiting be excited, which seems to have the effect of emptying the air-passages of the secretion. Other cases take an unfavorable turn, by the inflammation becoming more active, from some accidental circumstance, such perhaps as exposure to cold. Cases of this sort are most common in spring and autumn. In the acute bronchial affections of children, there are often considerable variations in the state of the breathing and the pulse,—the latter depending in a great degree on the former. The breathing for several hours continues free and easy; afterwards it gradually becomes less so; and at last great difficulty takes place suddenly, even so as to threaten immediate suffocation. These exacerbations appear to be owing to three circumstances; *1st*, collection of mucus in the bronchi; *2dly*, increased circulation through the lungs; and *lastly*, venous congestion. Children so affected, soon fall into a comatose state; the face, which for some days perhaps had been quite pallid, now becomes livid, or a dark circle shews itself round the mouth, and the child sinks in the manner already described. In some urgent cases, the fatal event takes place in sixty or seventy hours from the time alarm is taken; the majority of cases, however, are not so rapid, the course of the disease being from five to fifteen days; but when it is protracted, other structures generally become involved, the inflammation spreading by contiguity; and the same happens in adults.

In all affections of the lungs, particularly in the acute, the bowels become constipated, and the evacuations fetid.

The expectoration in bronchitis is at first scanty and viscid, particularly so in the most acute cases; by degrees it becomes more copious and less viscid, and therefore more easily expectorated, till at last it is discharged in considerable quantity, having the appearance of starch mixed with small bubbles of air, and occasionally streaked with a little blood. If the case go on well, it gradually diminishes, and becomes slightly yellow in colour; the patient is troubled with the cough and expectoration in the morning only; at length they cease entirely. Sometimes, however, the acute disease runs into the chronic form, which is now to be described.

#### CHRONIC BRONCHITIS.

LIKE other chronic inflammations, this affection sometimes succeeds to an acute attack; sometimes however, it takes place as a slow and insidious inflammation of the bronchial membrane. This form of the disease may affect individuals of all ages; but it is most frequently met with in old people, and those who, by occupation, are exposed to the inhalation of dust. It sometimes succeeds also to the eruptive fevers; and frequently co-exists with diseases of the heart.

It is occasionally mistaken for phthisis pulmonalis ; and is one of the morbid conditions of the organs within the chest, which give rise to the symptoms denominated asthma ; and is a frequent cause of dropsical affections.

When the disease succeeds to acute bronchitis, the fever declines, but the pulse for some time continues frequent ; the cough and difficulty of breathing continue, but they are always relieved for a considerable time, after free expectoration. The patient still has night exacerbations and disturbed sleep, which, however, gradually decline with the disease. The expectoration still copious, becomes opaque, yellow, sometimes puriform, and has occasionally a greenish hue ; at last it diminishes in quantity. The appetite returns ; and although weakened by copious night perspirations, and which take place during the day upon making the least exertion, the patient is sensible of gaining some strength. Gradually all these symptoms cease, and some individuals appear to undergo a perfect cure ; but in general they are not so fortunate, for during the subsequent part of their lives, an easterly wind, or a humid atmosphere, occasions a renewed attack ; and with many, the same effect is produced by eating indigestible food, or by neglecting the bowels. Now and then, therefore, they become indisposed ; the voice becomes hoarse ; the cough short and croupy, with more or less oppression in breathing, attended sometimes by febrile symptoms. In the chronic form of the disease, the expectoration takes place in a much shorter time from the commencement of the indisposition than in the acute ; sometimes in a few hours ; it is viciid at first, but soon becomes copious, and the patient is relieved by the discharge. One attack leads to another, till at last the individual is generally affected with dyspnœa,—he is almost constantly coughing and spitting, and is unable to lie in the horizontal posture ; he feels great difficulty in mounting a stair,—and is said, in short, to have an habitual asthma.

I have stated, that Morgagni, and other old writers, seem to have been well acquainted with the phenomena of chronic bronchitis. We are told, for instance, by Morgagni, that Valsalva examined the body of the Bishop of Imola, who was supposed to have died of phthisis, having had considerable expectoration before his death ; but he did not find tubercles, or any other disease, in the structure of the lungs.

In the acute and chronic forms of bronchitis, cases now and then present themselves, in which the expectoration is very small in quantity, so as sometimes scarcely to be perceived, when the disease has been denominated “dry catarrh,” and “dry asthma.”

*Stethoscopic signs of acute and chronic bronchitis.*—Percussion affords little information in any of the forms of bronchitis ; but auscultation enables us to determine the stage and extent of the disease, even before the symptoms are completely formed. In the first stage of inflammation of the mucous membrane of bronchi, it becomes somewhat swollen, probably from the increased quantity of blood in its vessels, and its surface dry ; upon applying the ear to the chest, either with or without the cylinder, instead of hearing the natural

soft murmur of respiration, a louder sound strikes the ear; sometimes like a snore, at other times sibilous, or resembling what may be called a somewhat harsh, brazen sound. It is more sonorous, and flatter, according to Laennec, in proportion as the mucous membrane is swollen, and its surface dry; and he states,—“When so strong as to resemble the prolonged scrape of the bow on a large violoncello string, or the note of the wood-pigeon, there are usually redness and swelling at the bifurcation of some of the principal bronchia.”\*

As the disease advances, it has been stated that wheezing takes place, which is produced by the passage of air through the diseased secretion in the bronchial tubes; this is called “the mucous rale or rattle,” which in many cases is so loud, as not only to be heard on entering the room, but to be felt by placing the hand upon the chest, which experiences a vibration during each inspiration and expiration. In some cases we may find the respiration suspended in a portion of the lung for an hour or two, which becomes restored after a severe fit of coughing. In this case, percussion may be of some assistance to us. These occasional interruptions to respiration, are owing to a plug of tenacious mucus or lymph closing up the entrance of the tube; or it may be completely filled with viscid matter.

In chronic bronchitis, attended with expectoration, we have in some cases the same mucous rattle over the whole thorax. When there is no expectoration, then we hear pretty loud snoring, which is denominated the “dry sonorous rattle;” occasionally it resembles the cooing of a wood-pigeon; and sometimes at the very top of the inspiration, a sound is heard like the chirping of a bird.

Occasionally a prolonged hissing sound is perceived, flat or sharp, of greater or less intensity, called the dry “sibilous rattle,” which has a resemblance also to the chirping of birds. And sometimes a sound is heard, which Laennec has aptly compared to that which is “emitted by suddenly separating two portions of smoothed oil stone, or by the action of a small valve.” In truth it is what may be denominated a clicking sound. Laennec states, that these sibilous sounds are probably owing to minute portions of very viscid mucus, obstructing more or less completely the small bronchial ramifications, or to a local contraction of the small tubes, from thickening of their inner membrane.

*Appearances on dissection, and pathological remarks.*—On opening the thorax, we generally find that the lungs do not collapse, if the individual have died from suffocation in consequence of the engorgement of the bronchi with matter. In some cases, in which the cough has been severe, the surface of the lungs looks white, as if coated with a layer of coagulable lymph; but on examining this appearance more closely, it is found to depend on an effusion of air beneath the pleura, forming that peculiar condition termed emphysema. On opening the trachea, it will sometimes be found filled with matter; but in general, it is merely coated with thick, viscid mucus, which, when wiped off, shews some degree of redness, increasing towards the bifurcation. The bronchial

tubes are found more or less filled with matter, which is sometimes like mucus or pus; occasionally it has a mixed appearance, which is appropriately denominated maco-purulent; sometimes it is tinged with blood, and looks reddish. This secretion is found occasionally even in the air-cells, distending them, giving a uniform granular appearance to the whole of the part affected; and there can be no doubt, that this is one way in which tubercular formations take place in the lungs. Upon washing away the puriform matter, the mucous membrane itself will be sometimes found intensely red; at others, of a dark red, like lees of wine; the discolouration will be found to increase in the course of the ramifications. The texture of the membrane is observed to be thickened, more especially in chronic inflammation. Ulcerations are frequently seen at the great bifurcation, rarely lower down. The pulmonary substance will be found more or less congested with blood, and sometimes œdematous. These are the ordinary appearances observed in bronchitis; the following are to be regarded as accidental. False membrane is sometimes found in the trachea, the same as in croup; the lungs are seen in different stages of inflammation, from active sanguineous engorgement, to complete disorganization; pleuritic effusions are also sometimes found, and enlargement of the bronchial glands. In the brain we frequently see marks of impeded circulation, sometimes inflammation. In the abdomen, the liver is sometimes found gorged or altered in structure, and the mucous membrane of the stomach and bowels shews various degrees of vascularity, and even ulceration is observed. These appearances in the liver and bowels, are in all probability owing to long-continued impeded circulation through the lungs, and diseased condition of the blood.

In chronic bronchitis, we sometimes find considerable dilatation of the larger tubes, which is perhaps chiefly brought about by long continued distension,—a remarkable case of which once occurred to me. In this instance, I declared that there was a cavern in the superior lobe of the right lung, which upon dissection turned out not to be the case, but there was immense dilatation of the bronchial tube; thus mistaking bronchophony for pectoriloquy. Another case occurred to Dr. Alison, in which the dilatation was great, and the tubes affected numerous. A delineation of the lungs is given by my friend Mr. Spittal, in an excellent work on auscultation, to which I can with confidence recommend my readers.

In making *post-mortem* examinations, with a view of discovering the nature and seat of bronchitis, these accidental morbid alterations of structure should be kept in mind, along with the symptoms and progress of the case; because although they may form the most prominent appearances on dissection, and are no doubt in many instances the cause of death, yet they are only to be regarded as the effects of the original disease. Nay, sometimes an individual labouring under acute or chronic bronchitis, may have expectorated freely, immediately before expiring in the act of either coughing or vomiting, when we shall find little or no effusion in the bronchial tubes, and sometimes very little redness. It is proper to state also, that notwithstanding the attention which has been paid



of late years to the pathology of the lungs, there is still some ambiguity connected with this subject, evinced by the fact, that dividing the pneumo-gastric nerves in animals produces dyspnœa, change of voice, and effusion into the air-passages.

Of all the symptoms, wheezing is one which may be said to be peculiar to bronchitis; cough and dyspnœa, it has already been shewn, are common to all diseased conditions of the lungs, and not of the lungs only, but of other organs. Some assert, that the wheezing is owing to spasms, but this is not the case, for we find that it is greatest before expectoration takes place, the patient afterwards being pretty free from it till a fresh secretion collects in the air-passages. Dyspnœa has also by some been attributed to spasms. Reisseissen thinks he has ascertained the existence of circular fibres in the ramifications of the bronchi, commencing at the point where the cartilaginous circles terminate. Laennec supposes that he has also proved the existence of these fibres upon branches of the bronchi, of less than a line in diameter; and therefore concludes, that spasmodic contraction of these fibres occasionally produces dyspnœa. I am far from admitting this structure in the present state of our knowledge, but even if it were so, it is of little consequence, when there is an increased quantity of mucus in the tubes themselves, offering a sufficient mechanical cause for the phenomenon itself, and for the exacerbations and remissions, which are so frequently observed in all the forms of bronchitis. Whatever consequence may be attributed to such a structure, in accounting for the symptoms in some cases of asthma, it is of little practical importance in acute or chronic bronchial inflammation.

It has been already shewn, how the brain becomes affected during the course of bronchitis, when severe pain in the forehead is often remarked. Some suppose this is owing to inflammation of the membrane lining the frontal sinuses; but this is not the case, for if it were, this symptom would be most severe when patients are affected with what is called "a cold in the head:" besides which, it is a different kind of pain. That which proceeds from the state of the membrane in the frontal sinuses is pungent, producing a flow of tears, exactly as when we smell volatile salts. The lividity of the face and lips, and mucous membrane of the mouth, is owing to the want of the usual changes which take place on the blood in the lungs.

*Treatment of acute bronchitis.*—This depends exactly upon the period of the disease, the extent of the morbid action, the state of the cough, the expectoration, and the previous health of the patient. Bleeding is certainly not necessary in every case of bronchitis which comes before us, particularly in one that is slight, and confined to a small part of the lung; but if the whole lung be affected, and more especially when both are implicated, bleeding is to be had recourse to early and decidedly. It is a very doubtful remedy when the second stage is far advanced, and highly injurious in the last. I know no disease more under management by any remedy, than bronchitis is by bleeding, if performed in the first stage, or during the first part of the second; and there is no case in

which the stethoscope is more useful, for without it, this disease may advance through the first stage before it is detected by the ordinary means of investigation. Many assert, that bronchial inflammation will run through a certain course, in spite of every remedy; and so it will, if the inflammatory stage is nearly over before discovered, or if bleeding be not used in a decided manner. Although late bleedings are to be especially condemned in this disease, yet cases do occur, where the lungs become suddenly congested with blood, in which a well timed venesection is of signal service.

In the first stage of bronchitis, when both lungs are extensively affected, one bleeding will in general suffice, and we need not be afraid to carry it to syncope, as long as the air-passages are free from mucus; but after it has collected in considerable quantity, and I speak more particularly with respect to double bronchitis, sudden death may be the consequence, by robbing the patient of that strength which is required in coughing to produce expulsion. In bronchitis, we can scarcely ever determine the necessity or the propriety of bleeding by the ordinary signs, because in some cases the disease may be very extensive, without violent symptoms; in others, it may be very slight, and the symptoms very severe, owing, perhaps, to a disordered state of the stomach and bowels, or to some other, perhaps slight cause; and it is of great consequence to know when to desist from further depletion.

Cullen, in the 381st paragraph, states, that “in case the fever, catarrhal, and pneumonic symptoms, are immediately considerable, a blood-letting will certainly be proper and necessary; but where these symptoms are moderate, a blood-letting will hardly be requisite; and, when an effusion is to be feared, the repetition of blood-letting may prove extremely hurtful.” Which statement sufficiently proves that he must have practised with great uncertainty. We are to decline bleeding, not because we are afraid of producing effusion, but when we know that it already exists in considerable quantity in both lungs.

Leeching or cupping is very seldom serviceable in this disease; but in children who are too young to be bled at the arm, leeches are to be applied; and we have sometimes great difficulty in determining the number,—suffice it to say that it is better to apply few when in doubt upon the subject, and to repeat the operation in a short time. If consulted early, we can make a near approach to the effects produced by general bleeding, by applying a considerable number of leeches at one time, and stopping the discharge soon, so as not to allow the body to be slowly drained of blood; but even in children, it is far better to draw blood from a vein, when it is practicable. I speak from the result of considerable experience.

Next in point of importance to blood-letting, in pulmonary inflammation, stands antimony, as a counter-stimulant; this was well known, and constantly acted upon by Cullen, Fordyce, and others, many years ago, and it surprises me greatly to hear this practice attributed to Italian and French physicians. Digitalis is of little use, unless given in considerably larger doses than are generally recommended; but it is a dangerous remedy when the air passages are much

loaded. Colchicum has been highly recommended in this disease by a friend, who states that its effect on the pulse and the other symptoms, are sometimes quite remarkable. Emetics are very serviceable in the first stage, and are absolutely necessary in the last, in order to clear the air-passages when the cough fails to do so; and are more particularly serviceable in childhood and infancy.

Purgatives were at one time thought highly injurious in all inflammatory affections of the lungs, but upon erroneous pathological views.

Expectorants and diaphoretics are more injurious than beneficial, except perhaps in chronic affections; and I have often had to regret the loss of much valuable time by trusting to their action.

Opiates are perhaps more frequently injudiciously administered in inflammatory affections of the lungs, than in any other class of diseases. They are sometimes exceedingly serviceable, but in the great proportion of cases they are injurious, and in some the cause of death. These observations apply more particularly to the disease under consideration. Nothing will be found more detrimental than opiates, in the last part of the second, and during the whole of the third stage of bronchitis, when the patient's life depends upon the cough and the expectoration; and many an individual has perished under such circumstances, in consequence of a three hour's sleep. But they are sometimes useful, in the first stage, after the violence of the disease has been reduced by the lancet; they subdue irritation, the continuance of which would perhaps lead to a relapse. In the last stage also, they are serviceable when there is little or no secretion in the air-passages, and when there is considerable irritation and a violent cough, which, if not mitigated, keep the patient from sleep, and wear him out.

Counter-irritation is another powerful remedy in pulmonary inflammations; but all authors agree in condemning the too early application of blisters, which, in truth, ought to be employed oftener as a measure of safety, than of necessity. In acute cases, we cannot wait for the counter-irritation produced by antimony ointment, a blister should therefore be applied.

Attention, during the whole period of the disease, should be paid to the temperature of the extremities; and a warm bath has some times excellent effects in removing irritation, and promoting the comfort of the patient.

The regimen should be strictly antiphlogistic; but stimulants are occasionally very serviceable in the last stage. The patient is sometimes so weak and languid, that he cannot make any voluntary efforts to cough, upon which, perhaps, his life depends. In such a case, a stimulant frequently repeated, occasionally snatches an individual from the grave. It is difficult, however, to account for the stimulating treatment practised by Lacnec, who, in recommending the use of the spirituous preparations, such as warm wine, burnt brandy, and punch, says—"This plan is unquestionably eminently successful in a vast number of cases. By it we frequently observe a cold which seemed to threaten great severity, cured all at once in the course of a single night." (page 70.) But he observes in the subsequent page, that this plan is most successful in the very onset of catarrh; and that it is much less so after the supervention of the loose

expectoration. Whether this be owing to difference of climate or constitution, it is difficult to determine ; but that the disease of which I have been treating, demands very different means on this side of the Channel, I need not waste time to prove.

In the treatment of acute and sub-acute pulmonary inflammations, it is necessary to keep the patient quiet in bed—every exertion is to be avoided ; the exercise of the voice is also injurious ; and during recovery, it is essential to attend to the diet and clothing ; the bowels are still to be regulated ; and bitters are sometimes serviceable. In severe cases I hold it to be of advantage to persevere, for several weeks, in keeping up an eruption on the surface of the chest, by the application of tartrate of antimony ointment, or the frequent application of mustard plasters, or stimulating embrocations. Change of air, however serviceable it may be in some chronic cases, is often very detrimental in those now under consideration ; unless it be from the smoky air of London to the country, and even then it is always doubtful whether the patient is to be benefitted or injured by the change.

*Treatment of chronic bronchitis.*—In the treatment of this form of the disease, we must ever keep in view, that patients are in danger of sudden attacks of acute inflammation, which may terminate fatally ; or the substance of the lungs may become affected, from the diseased action spreading by contiguity ; lastly, œdema of the lungs may take place, which is a common consequence of this affliction.

General bleeding is rarely necessary, except under the following circumstances, viz. the occurrence of acute inflammation, sudden congestion of the lungs ; or dropsy depending on bronchitis. Counter-stimulants are almost as rarely necessary as general bleeding. The frequent exhibition of emetics cannot be too highly extolled ; they appear to be most serviceable at night, immediately before the usual hour of rest, and in the morning, particularly after a tolerable long sleep : their *modus operandi* has been already explained. Constant attention to the bowels is of the greatest utility ; and the occasional use of the warm bath is serviceable when the skin is dry and harsh. Expectorants appear to be sometimes serviceable, and the best is squills. I have seen expectorants used for a considerable time without any benefit, but after the application of a blister, or the use of the inhaler, the discharge has become free and easy. Of all the remedies hitherto recommended for the cure of chronic bronchitis, the best is long-continued counter-irritation by a succession of blisters, and particularly by the application of antimony ointment.

The balsams have been strongly recommended for their peculiar efficacy in inflammation of the mucous membrane, more especially that of the lungs. Dr. Armstrong has spoken very favorably of them in his work on Scarlatina, &c., but I have no doubt, subsequent experience modified his opinions upon this subject. I have tried the copaiva in many cases in practice, without being able to discover its efficacy. Tar vapour has been recommended as a sovereign remedy in phthisis, and there can be no doubt it has been beneficial ; but the cases



in which service may be expected, are those of uncomplicated chronic bronchitis. I think good effects have frequently been produced by the *tinctura lyttæ*, but exhibited in doses two or three times greater than those commonly used.

If change of air be had recourse to, a warm situation should be chosen with a dry sandy soil; patients should avoid exposing themselves in cold damp weather, particularly in this country, when the wind blows from the east. Warm clothing is highly necessary; but it is important that medical men should prevent the patient from being too much loaded; and the best way to accomplish this is, by recommending a leathern jacket and drawers, and to forbid a great coat, particularly if he be allowed to take walking exercise. I must refer the reader to Dr. Forbes's translation of Laennec's work, for much valuable information on the subject of bronchial disease, and to the notes of the accomplished and experienced translator also, who has conferred a great boon upon British practitioners.

#### INFLAMMATION OF THE LARYNX.

THIS disease has a very close analogy to croup; which indeed seldom exists, without extending to the membrane lining the larynx; but as the inflammation is sometimes entirely confined to the latter organ, it is necessary to give a separate description of each disease.

Inflammation of the larynx is a common cause of death in small-pox and scarlatina, and it sometimes follows measles. When this disease occurs in the acute form, it is known by a painful sense of constriction in the throat, which is increased by pressing the larynx; speaking aggravates the pain, as does swallowing; the voice is hoarse; the breathing soon becomes laborious and shrill during the act of inspiration; there is considerable heat of skin, thirst, rapid pulse, and great anxiety. On looking into the throat, the fauces frequently look swollen and turgid, and of a dark red color, or coated with lymph; but this affection of the throat is not peculiar to laryngitis, as the inflammation may be entirely confined to the larynx. In some cases, the epiglottis is involved, which renders the motion of the tongue painful. The patient is constantly hawking, in order to clear the air-passages, and occasionally spits up a small quantity of thick tenacious mucus. As the disease advances, the face becomes swollen and turgid, it has frequently a livid appearance, and life is quickly destroyed by suffocation. Convulsions occasionally precede death. This disease sometimes runs its course in from thirty-six to forty-eight hours.

A chronic form of inflammation of the larynx, although described by some as being of more common occurrence than the acute, is, I apprehended, less frequently met with; the mistake having arisen from its being confounded with the disease described by Bayle, under the name of *œdema glottidis*. That chronic inflammation, however, does take place, we have very good proof, from the ulcerations which are sometimes found in the larynx, and also round the glottis, which even destroys portions of the cartilages. In the chronic disease, particularly when attended with ulceration, there is pain ascribed to the part af-

fect, great difficulty and pain in swallowing, hoarse voice and dyspnoea; the patient passes distressing feverish nights, and expectorates a scanty sanious-looking matter, which has occasionally an offensive odour. This form of the disease sometimes accompanies phthisis pulmonalis; whether it does so or not, the patient becomes emaciated, and dies with the usual symptoms of hectic fever.

On dissection, in the acute disease, the mucous membrane is found vascular, thickened, and rough from minute ulcerations, or it is covered with a thick exudation of lymph.

With respect to the treatment, as it is similar to that recommended in croup, I shall consider them together, after describing the latter disease.

## CROUP.

THIS disease is of frequent occurrence among children residing in damp bleak situations on the sea coast; it consists of an inflammation of the lining membrane of the trachea, and is often connected with bronchitis and laryngitis, the one running into the other, so much so, that they frequently cannot be distinguished. It is scarcely a hundred years since this disease was first recognized, but the first good description was given by the late Dr. Home. It is rather curious that croup is a disease almost peculiar to infancy and childhood, while inflammation of the larynx and bronchial tubes occurs at all ages. Although there are some instances of croup affecting adults,\* yet it is rare to see it after twelve years of age. One attack predisposes to another; but as age advances, this susceptibility goes off. It is more frequently met with on the sea-coast than in inland districts, and in the neighbourhood of wet marshy lands than in dry situations; thus it appears to be more frequent in Leith than in Edinburgh, notwithstanding the high and exposed situation of the latter.

Dr. James Hamilton jun. has stated, but perhaps precipitately, that croup is a common disease in certain parts of Edinburgh. Above three thousand people have been attended annually by my pupils for several years past, and out of more than eighteen thousand patients we have not had above twelve cases of croup; but I have frequently been asked to attend dissections of children, who were supposed to have died of croup, which proved upon examination to be bronchitis.

Croup has been divided into three species, viz. the acute, chronic, and spasmodic. Under this last head, I shall take an opportunity of noticing the affection already mentioned, as first described by Bayle in the year 1819.

*Phenomena.*—It usually commences like a catarrh, the symptoms being more or less severe, with some degree of fever, preceded by chilliness; the voice soon becomes hoarse; febrile symptoms increase; and in a day or two, the breathing becomes more and more impeded, particularly during inspiration;

\* It would appear that General Washington, the liberator of America, and Joséphine Bonaparte, both died of this affection. The last fact is stated by Bretonneau, (at page 65.) on the authority of Bécclard, who discovered the disease when employed in embalming the body.

at last the respiration becomes stridulous, and the voice shrill; a harsh, dry cough exists from the beginning, and when there is any expectoration, it has more or less of a muco-purulent appearance; sometimes small masses of lymph are discharged, which occasionally resemble portions of false membrane. As the disease advances, the expression of countenance becomes more anxious; the lips and cheeks have a swollen, livid appearance, alternating perhaps with a deadly paleness. The pulse is frequent and small, and occasionally intermits. There is prostration of strength, and restlessness; although the surface of the body be, generally speaking, hot, the extremities are frequently cold; at last, the body is covered with a cold, clammy sweat, and the child dies of suffocation. On looking into the throat, the fauces are sometimes found inflamed and swollen; but this is not a necessary part of the disease, it merely shews that the inflammation is extensive. Many cases of croup, however, which I have seen, appear to have been produced by the extension of inflammation from the throat into the air-passages. This was the case in the disease described by M. Bretonneau, and to which he gave the name of diphthérie.\* The course of the disease is various; sometimes children are cut off early from asphyxia, but in general it lasts from two to four days. In chronic affections of the trachea, the symptoms are less violent and urgent, but having, upon the whole, pretty much the same character, viz. dyspnœa, shrill voice, and stridulous breathing. This is probably the affection that Dr. Warren has called "bronchial polypus," and which he has described in the 1st volume of the Transactions of the College of Physicians.

*Causes.*—There can be no doubt that cold and moisture produce the disease, and that sometimes, from peculiar circumstances, a great many cases have occurred in the same district. The most remarkable epidemic appears to be that which took place at Tours some years ago, and which is described by M. Bretonneau, during which one hundred and fifty individuals died. It affected adults as well as children, and was particularly severe in a French legion quartered in the district. This author supposes it to be contagious, which, from the facts he has detailed, is very probable, although there are a great many difficulties yet to be solved before we can altogether admit this point. It sometimes succeeds to bronchitis, and also to severe inflammation of the fauces.

*Appearances on dissection.*—On opening the trachea, false membrane is found lining the organ in various states; sometimes it is soft and diffuent; sometimes partial; at others extending beyond the bifurcation. Sometimes it is found of very considerable thickness and firmness, of a tubular form, corresponding exactly with the canal which it covers, and extending an inch or two into the bronchi; on some occasions, the first divisions of the tubes are as completely lined as the trachea. Frequently the larynx is similarly affected, but I have never a complete tube in this situation. On some occasions, bronchitis co-exists in one lung, or in both, which must always be kept in view, when considering the probability of affording relief by the operation of bronchotomy. I have seen

\* *Traité de la Diphthérie*, par P. Bretonneau, 1826.

the lungs inflamed in various degrees, and almost always considerable portions are in a state of engorgement, owing perhaps to the mechanical impediment to respiration.

In M. Bretonneau's numerous dissections, false membrane was found extending from the tonsils down the air-passages, and sometimes even into the œsophagus.

*Pathological remarks.*—Since the publication of Dr. Cheyne's beautiful illustrations of croup, no doubt has existed that the false membrane is the product of severe inflammatory action of the mucous surface.

A great deal too much has been attributed to spasm in this disease. Cullen, for instance, assigns more danger to spasmodic action, than to the exudation of lymph. In the 327th paragraph, he says: "The peculiar and troublesome circumstance of the disease, seems to consist in a spasm of the muscles of the glottis, which, by inducing a suffocation, prevents the common consequences of inflammation:" and again, in the 329th, "When the disease ends fatally, it is by a suffocation, seemingly, as we have said, depending upon a spasm affecting the glottis; but sometimes, probably, depending upon a quantity of matter filling the bronchiæ." At the same time, he attributed the febrile symptoms to a corresponding spasm on the surface; in fact, he was fond of riding his spasmodic hobby, and being unacquainted with pathological investigations, his great mind was frequently turned out of the proper path of inquiry.

Spasm may certainly exist in this disease; but there is sufficient reason to account for the symptoms without having recourse to spasm as a cause. We have at first slight difficulty of breathing, from the increased vascularity and distension of the vessels of the mucous membrane producing swelling, and consequently some diminution in the calibre of the air-tube; subsequently, from a greater or less degree of congestion of the lungs; and lastly, from the exudation. Death is sometimes produced by asphyxia early in the disease, by congestion of the lungs, and by the inflammation being peculiarly severe at the rima of the glottis, occasioning such a degree of swelling as to prevent inspiration, and children often die during the act of crowing.

*Treatment.\**—This is a disease of all others which requires promptness of decision, and activity in practice; for if the false membrane be allowed to form, not above one case in the hundred will be saved. The worst cases are those in which a soar throat has been neglected, and the inflammation has spread into the windpipe; or those in which patients have laboured under bronchitic symptoms for a week, or perhaps more, before the disease has affected the trachea and larynx, under which circumstances, a recovery is rather to be considered as an escape, than as an event to be expected. Very opposite opinions exist respecting the treatment; some trust, perhaps too much, to bleeding and blistering, to the neglect of other means; and there are others who assert that bleeding is injurious. I shall first state the practice which I have found to be successful, and afterwards that which has been recommended by others.

\*The same observations are equally applicable to inflammation of the larynx.



If consulted early, there can be no doubt of the propriety, nay, the necessity of drawing blood; if by opening a vein, so much the better, because we can thereby make an instantaneous impression upon the disease, and upon the system, by diminishing the quantity of blood, altering the determination, and unloading the lungs. However young the child, if above eighteen months or two years old, I would recommend this practice from experience; but only when the child has been previously healthy, and we are satisfied that there is no considerable effusion into the ramifications of the bronchi, and that the false membrane is not already formed in the trachea; otherwise, death will frequently be the consequence. This happened in the case related in the 18th observation of Bretonneau's work; the patient was bled on the sixth day of a severe disease, and died the same night. Among other appearances found in the dissection of this case, the following are described at page 160.—“The false membrane lined the larynx, the trachea, and extended deep into the air-passages, even to the fourth subdivision of the bronchi of the right side, and the last ramifications on the left.”

Leeches are to be applied in numbers corresponding to the age, strength of constitution of the patient, and period of the disease; and should be placed along the course of the wind-pipe, or top of the sternum; they should be repeated according to circumstances. But it can be of no use to draw blood even in this manner, if a sufficient number of leeches be not used, and re-applied at sufficiently short intervals, or if not employed till the false membrane is already formed. In the case which forms Bretonneau's 17th observation, detailed at page 155, it will be found that a child of twenty-seven months old was seized on the 4th December with a slight cold, and altered tone of voice. During the 5th and 6th, it became worse, and on the 7th, we are told that *three leeches* were applied to the neck, and a little ipecacuan was prescribed, which was continued on the 8th and 9th without the leeches; the child died on the 12th. It is no wonder, then, that this author should condemn depletion, this being the way in which it was employed.

If general blood-letting be used, one operation ought to be sufficient, and we must subsequently trust to the application of leeches.

Emetics are to be administered, more especially at the beginning of the disease, and when it is complicated with bronchitic effusion. In the commencement, the best emetics are the antimonial, prepared by dissolving two grains of the tartrate of antimony in two ounces of water, a tea-spoonful of which is to be given every five or ten minutes, till the full effect is produced. In many cases it is difficult to produce vomiting, but by giving the antimony, we ensure its counter-stimulant effects, whether vomiting be produced or not. Brisk purgatives are also necessary, until the bowels are freely opened. During the whole course of the disease, the warm bath used occasionally through the day, will be found serviceable. The effect of blisters is often very decisive in the first stage, after bleeding and leeching have diminished the violence of the disease; but it is needless to torture children after the false membrane is

formed. Children can rarely be made to inhale hot vapour; if they can, it will be found very serviceable.

We are informed by Dr. Mason Good, that two physicians of St. Petersburg, Drs. Harden and Miller, had ventured upon cold effusion *after every other remedy had failed*, and the practice was attended with success; but no one who understands the pathology of this disease, and has seen the appearances on dissection, will believe that the false membrane could be removed by such means.

I have a very high opinion of the action of calomel in this disease, if employed early, and not trusted to entirely, to the neglect of general and local bleeding. The more rapidly the system is affected the better; and it should be given in doses of two, three, and four grains, so that from two to three scruples are taken during the first twenty-four hours. If the calomel produce hypercatharsis, it is to be discontinued, and mercurial ointment is to be rubbed in on various parts of the body. The mercurial treatment should not, however, be too long persisted in; if it is to have any effect, it should be seen within the first thirty or thirty-six hours. It is impossible to say in what manner the calomel acts. Mason Good says, "it not only acts by exciting a salutary revulsion or counter-action, but *breaks down the thicker parts of the blood, from which the membranous secretion is principally furnished!*" page 427. Dr. James Hamilton jun. was once a mercurial champion of the highest order; he used calomel in very large quantities; but he has now changed his opinion, and considers it in the light of a poison, in almost every other disease but syphilis. Is there another individual in the British empire, who having cured forty-six out of fifty cases of such a dreadful disease as croup, by means of the action of calomel, which Dr. Hamilton alleges he has done,\* would not feel justified in recommending others to follow the same treatment? But this useful remedy has since been cast in the back-ground, and he has attempted to prove, "that the action of mercury tends, by exciting inflammation and effusion, to produce thickening of various membranes, particularly of the pleura."†

Bronchotomy has been frequently recommended in croup, and occasionally successfully practised. There are cases in which it ought to be performed, because there is a possible chance of success; and there are others in which such a step will only tend to bring surgery into disgrace. If the disease be confined to the larynx and upper part of the trachea, we ought not to hesitate when suffocation is threatened; but if the membrane extend into the bronchial tubes, or be complicated with extensive bronchitic inflammation and effusion into both lungs, it will be improper. It appears to me that bronchotomy should be had recourse to under the three following circumstances only:—In inflammation of the larynx, threatening suffocation;—when foreign bodies have acci-

\* "On the Use and Abuse of Mercury," &c. page 206. † Idem, page 219

dentally found their way into the larynx ;—and in the peculiar affection of the epiglottis, larynx, and rima glottidis, which was first minutely described by Bayle.

When performing this operation in a case of croup, it should be always kept in view, that if the disease be far advanced, the false membrane has a tubular form ; in fact, it has taken the shape of the canal, from the surface of which it is very easily separated ; so that when the incision is made through the cartilages, the membrane may collapse from the pressure of the atmosphere, and produce instant death. Before quitting this subject, I may mention that Bretonneau, in the epidemic which he described, trusted at last entirely to the action of mercury, and the local application to the inflamed tonsils, of pure muriatic acid ; and he assures us that the practice was attended with great success. With regard to calomel, he says, (at page 94,) that its good effects were perceived in a few hours after the administration of the first doses. But after a careful perusal of the work, and the result of the practice, I see no reason to alter the opinions already expressed.

Chronic inflammation of the trachea requires the frequent application of leeches, with blisters alternately ; inhaling the vapour of warm water, as well as breathing the vapour of tar, together with an occasional emetic ; the steady use of laxatives ; warm clothing, and farinaceous diet.

The disease which is described by Bayle, and to which I have several times alluded, is an œdematous affection of the larynx, glottis, and epiglottis. I conceive, however, that it is often owing to the swelling produced in the first stage of acute inflammation of the mucous membrane also, when it is swollen and dry ; and also to chronic inflammation, which is not attended by œdema. It is sometimes produced by sudden congestion of the vessels of the mucous membrane, which had previously been in a state of irritation, as I shall attempt to shew, when treating of the pathology of whooping-cough.

It appears to me, that this is the disease which sometimes goes by the name of “spasmodic croup.” The same pathology likewise serves to account for the phenomena of the affection, which is commonly known by the appellation of “crowing disease.”

It is probable, that this is the true pathology of the disease described long ago by Miller, and afterwards noticed by Parr and others, under the denomination of “spasmodic asthma of children.”

It is supposed that croup is a disease consisting of a combination of inflammation and spasm ; but, that spasmodic croup consists entirely of spasm. Occasionally, children die after giving a single crow, and I had once an opportunity of seeing a man of 40 years of age die in a few hours from the first attack. Upon minute inquiry, it will be found, however, that individuals cut off in this sudden manner, have for some days or weeks laboured under what is called a common cold.

I am inclined to believe that this disease may be produced by cerebral irritation, causing some morbid action in the nerves that supply the muscles of



the throat, and which, by producing a convulsive spasm, occasions the contraction of the larynx, so as to produce the following phenomena.

*Symptoms.*—Children are generally seized in the evening, or during night, with a sense of coldness over the whole surface, and laborious breathing. During inspiration, a long shrill sound is produced, alternately with coughing, and occasionally weeping, when the voice is observed to be hoarse and croaking. There is a sense of constriction in the throat, an expression of great anxiety in the countenance, with lividity of the cheeks and lips.

These phenomena are produced by the application of cold, and even by cold feet; they frequently occur during dentition. The bowels are almost always found to be in a neglected state. The disease is rarely fatal.

On dissection, the lungs will be found in general loaded with dark-coloured blood, so much so, as to have lost a great deal of their natural colour and buoyancy. At one time, I was disposed to regard this condition of the lungs as the disease, till a fatal case occurred, at the dissection of which I had the able assistance of my colleague, Mr. Syme, who displayed the state of the mucous membrane of the larynx in the most satisfactory manner, and drew my attention to the memoir written by Bayle. The following is a history of the case.

Edward Currie, æt. 40, a labourer.—Up to the period of the great fires in Edinburgh, which took place in November, 1824, he had always been a healthy, stout man. During his attendance in working the engines, and in carrying water, he was exposed to cold and wet, and was subsequently affected with what he called a severe cold and sore throat, attended by occasional head-aches; but having a large family, and being of industrious habits, he continued to work at his daily labour. On the 2d day of January following, he became worse, and was unable to go out, but sat at the fire-side almost the whole of the day, complaining of chilliness, sore throat, and tightness about his chest. After passing a restless night, he sent to my dispensary for assistance on Monday. At 5 o'clock in the evening, he had severe rigors and difficulty of breathing, and at half past 6, was visited by one of my pupils, Mr. Marshall, whose name is associated with many other interesting cases, and from whom I received the following report:—"On seeing him I believed he had caught a cold; he complained of sore throat, and evinced some uneasiness in swallowing, but there was no appearance of inflammation of the fauces, nor pain on pressing the wind-pipe. The rigors were still severe, the pulse strong, beating about 70 in the minute, and there was a sense of constriction in the chest. He was bled to the amount of 18 oz. during which the rigors ceased, but afterwards returned."

Mr. Marshall thought his patient was in no danger, and that the symptoms would soon give way to the remedies he had prescribed; but in about an hour after he took his leave, the dyspnœa became much worse, attended with severe rigors. Mr. Davidson, a respectable surgeon in the neighbourhood, was immediately sent for, who found the man in such a dangerous state, that he wished me to be present before any further step was taken; but soon the symptoms



became so much more urgent, that he could wait no longer, and he opened a vein in the arm; the blood was flowing on my arrival. About 18 oz. were abstracted with very little or no relief; although a large orifice was made, the blood did not flow in a stream, and it was very dark-coloured and thick. It coagulated very imperfectly, yielded no serum, and had every appearance of what is commonly called "dissolved putrid blood." The state of the respiration sometimes resembled that which is heard in croup, after the formation of the false membrane; at others, that of hooping-cough, during the paroxysm; indeed, the similarity was so great, that I heard a number of women discussing the point. It was ascertained that he experienced the greatest difficulty in breathing during the act of *inspiration*, when he made the shrill crowing noise. There was cough. He spoke distinctly after the bleeding, which he could not do before, but it was in a low voice, and the exercise seemed to cost him a considerable effort; he said, "I feel rather better." His face was pale and anxious, and I was told that it had been so for several hours, pulse rapid and feeble. Upon being subsequently asked if he had any pain, and where it was situated, he replied by placing his hand upon the thorax, and nodding. During the momentary absence of Mr. Davidson and myself in an adjoining apartment, the patient felt a desire to make water, and actually got out of bed unassisted, and lifted the chamber-pot. Upon our return, he was cautioned to lie down, and on no account to make such an exertion again; but he persisted, declaring he felt somewhat better, and in a moment afterwards he was dead.

The body was opened 36 hours after death. The following were the appearances observed. Right lung attached throughout its whole extent, by old adhesions to the pleura costalis, left lung free. The lungs and trachea were then carefully dissected out, including the root of the tongue, and minutely examined. The lungs were of a very dark colour, heavy, and congested every where with dark-coloured blood; and although there was no hepatization, yet two-thirds of these organs, when separated into small pieces, sank in water, a little below the surface; this was proved not to depend on alteration of structure, for by washing they were restored to their natural colour and buoyancy. The mucous membrane every where in the larynx, trachea, and bronchial tubes, was of a dark red colour, and coated with reddish mucus; but the bronchial tubes were not gorged with it, as seen in the lungs of those who die of bronchitis; the larynx was found so much ossified, that after being slit open, it could not be separated to any extent; the mucous membrane at this part was found so much swollen, as to leave the smallest possible passage for the transmission of air at the superior, but particularly the inferior aperture; the epiglottis was much swollen, erect, stiff, and of a red colour.

*Treatment.*—This affection in children frequently terminates after copious perspiration, so that nurses have been led to put them as soon as possible into a hot bath, which is in general efficacious, and it is the first thing that ought to be done. An emetic ought also to be given, and if these means fail, a vein should be opened, and a moderate quantity of blood abstracted, or leeches ap-

plied about the larynx. This is the case of all others for bronchotomy, and I confess that it is probable the life of Currie might have been saved, if the operation had been had recourse to. M. Thuilier has recommended compression from time to time of the œdematous epiglottis, which will not be easily effected; and if it could, little service would follow, as it is the condition of the membrane at the rima of the glottis, which occasions the danger. Bayle proposed the introduction of a sound into the trachea, failing which, bronchotomy. Lisfranc suggested that incisions should be made into the œdematous parts, to facilitate the discharge.

## HOOPING-COUGH.

THIS disease is also known by the appellations chin-cough, kink-cough, &c. and it is probable that it is not a disease of such recent origin as has hitherto been imagined. Gardien very sensibly states, that if it has not been described in France until the year 1414, it is because it has always been confounded with other species of coughs. Indeed, some pretend that it was known to Hippocrates, while others assert that it was imported in more recent times from the East. It is not of much consequence how this matter really stands, because the most perfect knowledge as to its true origin, would not enable us to treat the disease more successfully. Hooping-cough is a disease of childhood, although I have seen many instances in adult age. Heberden says that he has seen it in a woman of three score and ten, and in a man of eighty years of age. It may be said to occur once only in a lifetime, but several cases have fallen under my notice of secondary attacks. Dr. Rosenstein states, in his work on the diseases of children, &c. that in Sweden, in the course of sixteen years from 1749, forty-three thousand three hundred and ninety-three children died of the hooping-cough, which gives an average of 2712 per annum; but in the year 1755, five thousand eight hundred and thirty-two children died of this distemper. In general, the annual mortality amounted to from seventeen hundred to two thousand in that kingdom. According to Dr. Watt, the deaths from hooping-cough in Glasgow, have been pretty nearly  $5\frac{1}{2}$  per cent. of the whole deaths in that city; the greater number in any one year took place in 1809, when they amounted to  $11\frac{1}{4}$  per cent.; and he concludes, that next to the small-pox formerly, and measles now, chin-cough is the most fatal disease to which children are liable. He gives a table, which appears to prove, that in young children there is more danger than in those further advanced in life; which does not altogether accord with my experience.\*

*Phenomena.*—In the first stage of hooping-cough the disease is almost always confounded with a common slight catarrh; the duration of this stage varies very much; in general however it extends from ten to twenty days. There is a dry cough, occasional sense of constriction in the chest, and a feeling of

\* It affords me great pleasure to refer the reader to Dr. Watt's work on hooping cough, as the best which has ever been published; and to that of the late Dr. Marcus of Bamberg, who died the day after he sent his preface to the press.

weight in the head. The eyes are sometimes a little swollen and red, with frequent sneezing, and involuntary tears; in many cases, there is little or no fever except during the night; the bowels are generally out of order. We sometimes suspect the disease to be hooping-cough, because it is epidemic at the time, or in consequence of the convulsive appearance of the paroxysm of coughing. At last, however, the cough assumes a peculiar character; when this takes place, the disease is said to be in the second stage. It is characterized by an inspiration which is long and sonorous, producing a peculiar shrill noise, which is termed, in common language, the hoop or kink, to which succeeds an expiration, which is broken by frequent fits of coughing. No one who has seen the disease, when fully formed, can mistake it. When the cough commences, in slight cases, the features become a little swollen, the face red, the eyes suffused with tears; the cough, which is frequently interrupted by a long inspiration, is hoarse; the paroxysm ceasing with an expectoration more or less copious, frequently assisted by the act of vomiting, which discharges the contents of the stomach. As soon as this is accomplished, children are commonly able to return to their usual amusements, and appear to suffer little or nothing, until towards the period of the next paroxysm. The appetite is in general good. The expectoration is at first slight, scanty, and viscid; but if the disease go on in a favorable manner, the discharge becomes more copious, and less tenaceous. Young children scarcely ever spit out the expectoration, unless during the act of vomiting; it is generally swallowed as soon as discharged from the air-passages.

The patient is, in general, warned of the approach of the paroxysm, by a greater or less degree of chilliness on the surface, and a tickling in the throat, immediately succeeded by a sense of tightness both in the larynx and chest, and a dread of suffocation, which induces him to fly to his nurse, or to lay hold of any thing within reach, for support during the fit. Others seem to derive relief from lying all-fours on the ground, and when the discharge has taken place, they jump up and run about.

In more severe cases, the sense of suffocation is dreadful; the respiration is much more impeded; the cough more intense and protracted; the features more swollen, and of a livid colour; the eyes seem ready to start out of their sockets; the eyelids are much swollen, and the cheeks perhaps bathed in tears; till at last expectoration takes place, when the children pant for breath, and are unable to return to their play for a considerable time. The skin is above the natural temperature, particularly at night; complaint is made of headache; the appetite is bad, the bowels are much disordered, and flatulent distension aggravates the patient's sufferings.

The straining which takes place during the paroxysm is sometimes so severe, as to produce the involuntary discharge of feces and urine. It is no uncommon thing for a small blood-vessel to give way in the conjunctiva, producing ecchymosis; hæmoptysis itself occasionally takes place, but this is rare in comparison



to epistaxis, which is very frequent, and, when it takes place in plethoric children, is considered a very fortunate occurrence.

In the worst forms of the disease, fever is constantly present, and the breathing is always more or less impeded, which shews that some mischief is going on internally. Fits of temporary asphyxia are frequent, they are very often mistaken for convulsions, and by them children are sometimes instantly cut off. Indeed, children have been known to die suddenly during a paroxysm, asphyxiated, whose cases were previously slight, and not attended with fever. In some instances, convulsions occur, and carry off the patient.

Many of the severe cases met with in practice, are those in which this disease is engrafted, as it were, on bronchitis; or succeeds to small-pox or measles.

*Causes.*—Hooping-cough is rarely sporadic; it generally prevails as an epidemic. Some assert that it is unquestionably contagious, while others allege that it is not so. Some suppose that it is a disease produced by a miasm of a specific nature.

*Appearances on dissection.*—I have had between forty and fifty opportunities of examining the bodies of those who died of this disease.\* In one severe epidemic, we had upwards of two hundred cases at the dispensary, out of which there were thirty-two deaths. The appearances found on dissection were very uniform, according to the period of the disease at which death took place. I have seen two dissections of children who died asphyxiated, during the paroxysm, and in these the lungs were found to be gorged with blood; the whole lung, when put into water, shewing far less buoyancy than natural, and large portions, when cut off, were found to sink to the bottom of the vessel. But it was proved that this increase of gravity was not owing to alteration in the texture of the organ, which resumed the natural colour, appearance, and buoyancy, when deprived of the blood by washing. The right side of the heart, and the large vessels near it, were distended with dark blood. The mucous membrane of the air-passages every where presented a dark red appearance, seemingly thickened, the tubes containing more or less mucus tinged with blood. The brain was not examined.

In ordinary cases, when death takes place during the second, third, or fourth week, the following is a sketch of the appearances. In the head, marks of vascularity and of venous turgescence, and sometimes also effusion of serum between the membranes, and in the ventricles; but these were far from being invariable appearances. In some few cases, there was great vascularity, and some effusion at the base of the brain, more particularly at the origin of the nerves, but not to a greater extent than has been frequently remarked in bronchitis, and other diseases in which there was no tendency to spasmodic cough, or to spasm

\* It may be mentioned as a remarkable fact, evincing the improved state of society, and the advantages of education, in removing prejudices and destroying superstition, that in Edinburgh we are rarely prevented from examining a body after death, if sufficient attention has been paid by a medical man during the course of the illness,—except by the low Irish population, who seem to have a more superstitious regard for their dead on this side of the channel than in their own country.



of any kind. In one case, which was accompanied by violent and intractable convulsions, with considerable rigidity of the superior extremities, the substance of the brain had a rosy tint; on making sections, large drops of blood quickly exuded from numerous points on the cut surfaces. On exposing the lateral ventricles, the left *corpus striatum* and *thalamus* were observed to be enlarged, particularly the former; in so much, that in measuring the depth of the brain on each side, it was discovered to be nearly half an inch deeper on the diseased side than the other; when cut into, it was found to be rather harder than the corresponding parts on the opposite side. The child had previously enjoyed a good state of health, and even after death did not appear much emaciated.

Traces of disease were invariably found in the thorax. On some rare occasions, the lungs were somewhat collapsed; but in general they completely filled their respective cavities. In a few instances, the pleura costalis covered with lymph like an unctuous secretion. Once or twice the lungs adhered to the walls of the chest, by an intermediate deposition of soft coagulating lymph. The anterior surface of the lungs, in almost all cases, presented spots of a whitish appearance, as if coated over with lymph; but this was found, upon closer examination, to depend on emphysema, air being effused beneath the pleura, from the rupture or enlargement of the air-cells; considerable portions were observed gorged with blood. Sometimes the substance of the lungs was in a state of œdema; and occasionally portions were observed inflamed.

In persons who have not been cut off till the eighth or tenth week, tubercles in various states will frequently be observed; sometimes vesicular or crude, large and solitary, sometimes softened, and partly discharged by expectoration. On one or two occasions, I have seen one lung infiltrated with a soft caseous matter. The bronchial glands are found enlarged, if the patient do not die before the third or fourth week.

The mucous membrane throughout the air-passages, has always displayed more or less vascularity, which increased towards the ramifications, and the tubes were found filled with matter which had more or less resemblance to pus. In the trachea and larynx, this secretion is observed, but I have never seen them filled with it, like the bronchial tubes. Sometimes flakes of coagulable lymph are observed, and ulcerations about the glottis, in the larynx and trachea, but more particularly at the great bifurcation.

In the abdomen, sometimes every structure appears to be in a healthy state; at others, the liver is found gorged with blood, sometimes whiter, at others redder than natural. The mucous membrane of the stomach and bowels, has shewn various red patches, and I have seen ulcerations in the colon, and enlargement of the mesenteric glands.

Mr. Alcock, a scientific general practitioner in London, in one of the numbers of the Medical Intelligencer, states, that he "has repeatedly ascertained by dissections of patients who have died of hooping-cough, that the larynx invariably exhibited signs of inflammation, often to so great an extent, as by its swelling to close mechanically the glottis; often the exudation of coagulable lymph

near the larynx, the mucous membrane of the trachea and bronchiæ much increased in vascularity, and the cavities of the latter filled with fluid, more or less mixed with air, the appearance of the fluid varying from thin mucus to perfectly formed pus." This extract was presented to me by a friend one day after my lecture upon this subject, but I have never been able to procure the number of the periodical which contains the whole of the paper. I have thought it right, however, to give the extract, and to express the high respect I entertain for Mr. Aleock, from the accounts which have reached me at different times, of his zeal and indefatigable exertions for the improvement of pathology.

These *post-mortem* appearances correspond with the dissections recorded in Dr. Watt's Treatise.

*Pathology.*—Until lately, the most uncertain opinions prevailed respecting the nature and seat of this disease. Some supposed it to be a nervous affection, and of a true spasmodic character. Chambon and others assert that it is a true catarrh of the stomach. Some represent it to be a pure inflammation of the mucous membrane of the larynx, trachea, and bronchial tubes, to their termination in the air-cells. While there are others, like Gardien, who think that the disease is partly situated in the lungs, but that the essence of it consists of a spasmodic affection of the glottis and diaphragm. In consulting the works of Willis, published in the year 1670, it will be seen that nothing was then known of the nature and seat of hooping-cough, and from the general want of success in treating it, this branch of practice fell into the hands of old women and quacks. According to the Brunonians, it is a disease of true debility. Some, indeed, conjoin it with typhus; while others allege, that it depends on inflammatory action in the brain. Rosenstein places the seat of hooping-cough in the nerves of the chest, and Hufeland agrees with him in that opinion. Autenreith declares, he found the pneumo-gastric nerves inflamed. Breschet seems to support this opinion, but although this state of parts may have occurred on some occasions, it is denied as a more common cause by other authorities. Guersent has stated, that he opened a number of bodies with a view to determine the fact, but he did not find the pneumo gastric nerves diseased. No pathological information can be derived from Cullen's works, or even from Dr. Thomson's recent edition of them, respecting this, or any other disease; but according to his absurd nosological arrangement, it is evident he thought it to be of a nervous and spasmodic nature. Dr. Gregory, it would appear, gave up the investigation of the nature and seat of the disease in despair, for he used to make the following statement in his lectures:—"I do not attempt the proximate cause, though I may mention I have no faith in the theory that was advanced some years ago, that the disease depended on the stomach; it is more probable that it is seated in the lungs." Yet he considered it to be of a spasmodic nature.

The oldest opinion which can be traced, approaching to the true pathology of this interesting disease, is that which was advanced by the celebrated French writer Astruc, who states, (at page 142 of his Treatise on all the Diseases of

Children,) that “this disease principally consists in inflammation of the superior part of the larynx and pharynx, and more particularly of the latter, which is sometimes ulcerated with the constriction of the glottis, as dissection proves.

It appears to me, that investigators have been bewildered in endeavouring to discover the first link in the chain of diseased action, and by the character of the cough, with regard to which, it should be recollected, that a very slight degree of irritation in the larynx, and even about the glottis, will produce most violent convulsive fits of coughing. Dr. Watt says, that the cough is exactly what may be produced by any very violent irritation applied to the same parts, “of which, (says he,) I had a very striking proof some time ago. Two children had differed about their play; the one, who supposed himself ill used, to be revenged on the other, took a handful of saw-dust and endeavoured to thrust it into his mouth. He succeeded in his attempt. The other crying and struggling for relief, allowed a quantity of dust to be drawn into the windpipe. This gave great uneasiness, and after a short time excited violent convulsive fits of coughing, which exactly resembled those of the chin-cough. Even the hoop was very distinctly formed. At first he spat up nothing, afterwards thick mucus; at last the irritating cause being removed by the expectoration, the other symptoms disappeared. This was a very striking example of chin-cough being brought on artificially.” I have sometimes seen the same effects in both old and young, from articles of food, and particularly small portions of sweet-meats, going the wrong way, as it is termed, *i. e.* dropping into the larynx, or adhering somewhere about the margins of the glottis or epiglottis. I was once present at the dissection of a shoemaker, who died from extensive inflammation of the throat and wind-pipe, and who had during the whole of his illness, of four days standing, violent convulsive fits of coughing, with a complete hoop. On examining the throat and air-passages, extensive inflammation was discovered, and a small piece of a hog’s bristle was found sticking in the margin of the glottis.

My opinion of the nature and seat of hooping-cough is as follows:—There is something peculiar in the disease, since almost no individual escapes contracting it once in his life-time. I have no doubt that the nervous system is involved in the affection,—very seriously involved; but in the present state of our ignorance of the structure and functions of that system, the doctrine of spasm must be very cautiously received into the medical evidence of the case, more particularly as all the phenomena can be satisfactorily explained without its aid. The essence of the disease consists in irritation and inflammation of the mucous membranes of the body, but more particularly of the air-passages. This is proved by the pectoral or catarrhal symptoms, which are to be observed from the very first onset of the disease; by the increased secretion; and by the result of dissections. Some say the disease cannot be a consequence of inflammation, because there is no febrile excitement in the pulse in slight cases, and no increased heat of surface; but it is a fatal error to suppose that inflammation cannot exist without fever. In the majority of cases of hooping-cough, the inflammation, although extensive, is only *slightly sub-acute*, and there is consequently no heat of skin,



—no increased velocity of the pulse,—no thirst; but when the inflammation runs a little higher, then we generally have these constitutional symptoms. It will be observed on perusing the description of this disease given by every author, that it begins with the common symptoms of catarrh, from which it cannot, during the first stage, be distinguished.

The disease, when formed, comes on in paroxysms. I shall not stop to inquire whether these paroxysms are occasioned by a peculiar affection of the nervous system or not. The paroxysm commences with a sense of coldness on the surface, making an irregular determination of blood, that takes place towards the lungs, which perhaps never will be satisfactorily explained. These organs become gorged with blood, and the air is consequently prevented from obtaining a free passage through the ramifications of the bronchi and air-cells; some degree of dyspnœa is produced, with tightness in the chest, and a sense of suffocation. All the powers of the constitution are brought into play to remove this congestion, violent coughing is excited,—all the voluntary muscles are called into excessive action, and a universal muscular commotion is produced, which tends to force the blood on in its circulation,—a copious secretion takes place from the mucous membrane, probably throughout the whole extent of the air-passages; and the fit ceases when the mucus is discharged, which is sometimes promoted by the act of vomiting. Towards the close of the paroxysm, a determination of blood takes place to the skin, frequently producing copious perspiration, which is probably assisted, if not entirely produced, by the violent muscular commotion into which the body is thrown. This is also perhaps another way by which the congestion of the lungs is removed.

It is generally believed that the hoop is produced by spasm. It is not my business to attempt to disprove this allegation; but I have already shewn that the hoop has been produced by extraneous bodies, which have found their way into the larynx, or have been lodged about the glottis. It has also been shewn, that in pure inflammation of the mucous membrane of the larynx, before and after the effusion of coagulable lymph, the same sound has been heard; and also when the calibre of the larynx at the *rima glottidis* has been diminished by mere swelling of the mucous membrane, as well as by effusion, forming the disease which Bayle has described under the name of *œdema glottidis*. In all these cases, there is the long sonorous or shrill inspiration. Cullen says, (in the 1404th paragraph,) that “the peculiar sound is produced by air rushing through the glottis with increased velocity.” It is admitted that this is occasioned by the diminution of the canal through which the air has to pass, and the only question to decide is the cause of this diminution. Cullen and others assert that it is owing to the spasmodic contraction of the muscles of the throat, which are connected with the larynx; while I presume, that it is generally owing to the other causes:—the fact is capable of explanation in both ways, but the decision will influence the treatment. In whooping-cough, we have decided evidence of congestion and inflammation of the air-passages; the larynx, and parts in the neighbourhood, principally suffer, and



at the commencement of the paroxysm, when blood is accumulated in the lungs, the mucous membrane, I apprehend, becomes more swollen, and the space at the rima of the glottis is diminished, so as to be almost closed. It is admitted that the difficulty which the air experiences in traversing this part, produces the phenomenon of the hoop, and increases the tendency to asphyxia and convulsions. The distension of the vessels is probably relieved by increased secretion and determination of blood to the surface.

Sometimes the lungs are not properly relieved from a state of engorgement, which, if life be not immediately destroyed, terminates in inflammation of the substance of the lungs, or the formation of tubercles.

The brain is frequently affected, not in all probability from any primary diseased action in that organ, as some have supposed, but from the obstructed circulation in the lungs, and the over-loaded state of the right side of the heart, preventing the free return of blood from the head. The brain, as well as every other part of the body, must likewise suffer from what may be termed the chemical condition of the blood itself, owing to the want of those natural changes which take place in the lungs, which are prevented partly by the congested state of these organs,—partly by the want of a sufficient supply of air during each paroxysm,—and partly by the diseased condition of the mucous membrane.

*Treatment.*—Dr. Ferrier, in his *Medical Histories and Reflections*, (vol. iii. p. 215.) says, that “hooping-cough has been too much trusted to the management of nurses, and has been empirically treated, even by those physicians who have applied themselves to the particular consideration of the complaint.” Dr. Gregory, in his lectures upon this subject, with that frankness and candour which marked his career, used to make the following statement:—“I think it proper for me to warn you, in the first place, that we have no cure for it.” Cullen divided this disease into two stages; the first continues perhaps for three weeks; during this period, he imagines the contagion to be present, and operating on the animal frame. The second stage embraces the whole remainder of the disease, should it last for twelve months. Dr. Mason Good says, that he believes the hypothesis to be correct; “throughout the first stage (says he,) our attention should be directed to whatever will moderate the influence of the contagious stimulus, retard the return of the convulsive paroxysms, and mitigate their violence.”

“Bleeding, (says Mason Good,) in severe cases, will be found necessary for this purpose; but it should be avoided, except in severe cases, as spasmodic affections are often rather increased than diminished by the use of the lancet; and it will in general be found better to employ blisters as a substitute.” This paragraph contains almost the best proof I could bring forward, that bleeding, even in the present age, is frequently recommended and practised upon unsound principles. If bleeding be employed, it is for the prevention or cure of inflammatory, and not spasmodic action; but it is only in *severe cases*, according to Mason Good, that bleeding is to be used, “*as spasmodic affections are often rather increased than diminished by the use of the lancet.*” Now, it appears to

me, that if the lancet tend to increase a slight spasmodic complaint, it will surely aggravate a severe one in a still greater degree.

Bleeding is not necessary in a great majority of cases, nay, it might prove injurious in some, by interfering with the efforts of the constitution; but when the patient has fever, difficulty of breathing between the paroxysms, a near approach to asphyxia or convulsions during the paroxysm, or if he complain of a constant sense of stricture in his chest, or severe headache, I would recommend blood-letting, by opening a vein, if the patient be robust, about two years of age; and if the air tubes are not filled with mucus, I have frequently seen the best effects from opening the jugular on such occasions. It is impossible to say what quantity should be taken; it ought to be sufficient to make an impression upon the disease, or upon the system. I once saw a boy six years old, laboring under hooping-cough, who was in great danger, from the congested state of his lungs and brain. I requested the gentleman who was in immediate attendance, to open a vein, and to allow the blood to flow till relief was obtained. At my next visit, I found that 15 ounces had been abstracted. He bore the bleeding well, and his condition was very much improved. Next, day, however, violent enteritic symptoms took place, which were not subdued till after the application, in all, of twenty leeches. This boy made a remarkably rapid recovery. It must not be understood that I would recommend the same quantity of blood to be taken from every child of that age: the case is mentioned to shew that a considerable quantity may be abstracted without necessarily producing any bad consequences, and its power in controlling the disease.

A similar practice must be pursued if the patient be lethargic, which, in such cases, marks oppression of the brain, and frequently precedes convulsions. Sydenham speaks strongly in favour of V. S. in hooping-cough, at page 321, (Swan's Edit.) The following statements will be found: "*By this practice of venesection, and repeated purges, and by this only, is conquered the convulsive or hooping-cough; an obstinate disorder, which scarcely any other method will subdue.*"

We must depend upon leeches in young children; as well as in older patients in advanced stages of the disease: The number of leeches to be regulated according to the circumstances noticed when treating of bronchitis.

To show the advantage of leeching even at the eleventh hour, notice the three cases mentioned, and marked at p. 3, Willan's Diseases of London.

It should be mentioned, that hooping-cough is a disease in which auscultation should be employed; by this means, we may determine whether inflammatory action be going on in the lungs,—whether it be general or partial,—and whether the bronchial tubes be loaded with matter; if they are loaded, we should be deterred from bleeding, for reasons so much insisted on when treating of bronchitis.

After I was convinced of the morbid state of the larynx and *rima glottidis*, producing the hoop, or kink, as it is sometimes termed, it naturally occurred to me that leeches, applied over the part affected, would be attended with the best effects in cases where the paroxysms were severe, and threatening asphyxia.

The theory may be wrong, but I can speak confidently of the success of the practice. I had an opportunity of trying it in twelve cases, in three of which the hoop never returned, although the children were previously threatened with asphyxia; all the others were relieved in the most striking manner; and had it been necessary, from the re-occurrence of urgent symptoms, to apply them again, or had a great number been put on at first, I feel persuaded the hoop would have been destroyed in the whole. The immediate relief of this symptom, which occurred in the case of a lady, when threatened with suffocation, I shall never forget. Five children in one family were under my care, with whooping-cough; two of them had considerable dyspnoea between the paroxysms, with a tendency to asphyxia during each attack, and were exceedingly ill; blood was taken from the jugulars with extraordinary relief; a third had leeches frequently applied. These three recovered speedily. The other two had the disease so favourably at first, as not to require any treatment, except keeping the bowels open, and an occasional emetic, yet they were the most troublesome cases out of the five, and were double the length of time indisposed.

A solution of the tartrate of antimony will be found useful, if the diseased action in the lungs shew any tendency to increase. Emetics have been much over-rated in whooping-cough. One or two may be of use when the disease is forming; and they may be exhibited now and then, in the latter stages, when the expectoration is not easy, and when we know, by auscultation, that the bronchial tubes are over-loaded with mucus. I have found an antimonial emetic the best, when there is any febrile disturbance; but should the emetic be wanted merely to unload the tubes, and particularly if the patient be weak, perhaps the sulphate of zinc will be found preferable, as it commonly leaves no sickness or depression.

Gentle purgatives are to be used for the purpose of keeping the bowels easy; great mischief is often done by the constant exhibition of drastic medicines, for weeks together. Many practitioners seem to forget, that the long continuance of powerful medicines will certainly produce great disorder of the bowels, and consequently foul evacuations.

The antiphlogistic regimen, and confinement to one apartment, during the first part of the disease at least, are essential circumstances in the treatment. An occasional opiate, and a warm bath, will be found of service as auxiliary remedies.

Blisters are necessary in very acute cases; but except in such instances, the counter-irritation produced by the tartar-emetic ointment, will be found most efficacious. This plan was first recommended by Autenreith.

It has frequently occurred to me to observe, during epidemics of whooping-cough, that those affected were sometimes attacked with measles, scarlatina, and even small-pox, the cases being much aggravated during the eruptive fever; but subsequently, upon the appearance of the eruption, the phenomenon of the hoop, which gives the character to whooping-cough, became very much moderated—in two or three cases it entirely ceased, but it generally returned when



the eruption declined; an instance of which is related in Dr. Ferrier's excellent work already quoted: "Miss —, aged one year and a half, had the hooping-cough in a slight degree for some weeks. When it seemed to be leaving her, she was seized with the measles, and there was an appearance of a very large crop of the eruption. Her cough was not very troublesome, and no longer resembled the hooping-cough. On the third day she was seized with an extreme degree of dyspnœa, and a short harassing cough, and the eruption almost entirely disappeared. The pulse became innumerable. Leeches were applied to the extremities, blisters were applied to different parts of the body, and every method was used to renew the eruption, but without success. The cough increased, but the dyspnœa began to relax, and at length, to my great satisfaction, the type of the hooping-cough was renewed, and my patient recovered, by time, and change of air. Not one spot of the eruption of measles, ran its usual course." Dr. Watt notices the same fact, and it now appears strange that so obvious a circumstance had been overlooked, as it is evident that the irritation was removed from the wind-pipe by the cutaneous eruption.

The application of the ointment occasions an artificial eruption, exceedingly like small-pox. Autenreith considered it a certain specific, when a copious crop was produced on the epigastric region; and he distinctly assures us, that the use of the ointment for twelve days produces a cure;\* but the result of my practice does not authorize me to make the same statement, therefore I am persuaded Autenreith could not have met with such severe cases as I have occasionally happened to treat, particularly in the epidemic which existed in Edinburgh about four years ago. His theory of its action, however, perfectly coincides with mine, that "when the irritation is well established, it acted by directing the blood to the surface from the air passages." It may be shortly stated, that I have seen it very serviceable in this disease, so much so, that I always have recourse to it; and it is a far more beneficial method of producing irritation in sub-acute and chronic inflammations, than that by blisters, because it is more permanent. The proportion of tartar-emetic in the ointment, is a drachm to the ounce. The antimony may also be applied, by sprinkling it on the surface of a pitch or warm plaster.

Several curious circumstances have attracted my notice, with reference to the external application of this remedy. In five or six cases, when it has been rubbed over the epigastric region, violent vomiting has been produced, which was proved to be owing to the antimony, by leaving off the ointment, and returning to it several times. When applied to the chest, the eruption sometimes appears on the genitals and groins; when this was first observed, I thought it had been produced by negligence, but I have since seen the same circumstance, in cases where every care was taken to prevent any accidental application to these parts.

\* I have reason to believe that Autenreith has changed his opinion, upon more enlarged experience of the remedy.



When the internal disease is severe, it is in general difficult to establish the cutaneous irritation by the application of the ointment. I have remarked in three cases, when indiscriminately applied over both sides of the thorax, that the eruption did not appear on that side in which the diseased action was most violent, while there was a copious crop on the other; and in one of the cases, the line of demarcation was exactly in the mesial plane.

Dr. Cullen, from the hypothetical notion that the disease continued during the second stage, merely by the power of habit, recommended antispasmodics or tonics; he therefore advised opiates and Peruvian bark. Dr. Hufeland likewise recommended belladonna, considering the disease to be of a true spasmodic nature; he gave it in doses of a quarter of a grain morning and evening, to children between three and six years of age. Ext. Conii was formerly in great repute. As tonics, small doses of zinc, arsenic, and nitrate of silver have been employed. In Russia, the berries of the spurge laurel are said to be specific; they are employed, it would appear, as stimulants and antispasmodics. The sulphates of alumen and garlic have also been highly extolled. But it would be no slight task, to give a list of the remedies which have been strongly recommended.

During recovery, it is of the greatest consequence to attend to the clothing, diet, and exercise of the patient; I have frequently traced relapses to cold feet, and to indigestible food. Laxatives are necessary, and the cold bath is in great estimation with some practitioners; of which last, I cannot give an opinion: but I have seen the greatest advantages in this disease, and many other cases of chronic bronchial affections, from sponging the body all over with water, or vinegar and water, two or three times a-day. Change of air is extolled by some individuals, but is often productive of great mischief, by occasioning a return of the disease. It is an important fact, that during the late epidemic, which was the most severe I have ever witnessed, all the children that were moved for change of air had the disease the longest. The children of two families, who had it in the very slightest form, were taken to the country when nearly cured; most of them had relapses, not only upon going away, but also on returning. The cause of relapse, in such cases, is easily explained; the patient may be moved from a warm situation to a damp, cold one; or he may be put into a damp bed; or a change of weather may take place when on his journey. It is a common practice to send whooping-cough children to play a considerable part of the day in tan-yards; but really the pathological notions upon which this practice is founded, are too contemptible to require refutation.

## CHAP. III.

### PNEUMONIA.

---

THIS disease has received various denominations, as peripneumonia, and pneumonitis; the term pleura-peripneumonia, is employed to express the co-existence of inflammation of the pleura and lungs.

*Phenomena.*—Like other acute diseases, pneumonia commences with shivering, followed by a hot stage, which is in general pretty violent, unless in congestive inflammation, when coldness predominates. There is more or less dyspnœa, and the number of respirations considerably exceeds twenty in a minute, which may be taken as about the natural standard. The breathing is in some cases very laborious, but we must be careful, as Andral properly remarks, not to allow ourselves to be led astray by the account which patients give respecting this point, for often, when the respiration is short and hurried, they will assure us that they do not feel the least impediment. Pain is not a well-marked symptom in inflammation of the substance of the lungs, the patient complains rather of a tightness in the thorax; and when pain exists, it is in general dull instead of sharp. The cough is short, perpetual, and does not come on by fits; it is dry at the commencement, and continues very distressing and obstinate. The expectoration is scanty, viscid, and discoloured, from an admixture of blood; sometimes it is bright like red currant jelly, but in general, it is rusty-looking, resembling brick dust intimately mixed with viscid mucus; it is so tenacious, as to adhere firmly to the sides of the vessel into which the patient spits. It is very important to attend to the colour of the expectoration, because it assists us in determining, not only the nature of the disease, but also its extent and severity. The expectoration is sometimes, though rarely, fetid. A gangrenous odour is perceived when the disease terminates in gangrene.

The pulse is variable in many respects, and practitioners should be very wary in depending upon it, in the confident manner so generally followed, and more particularly in pneumonia, which I have known to go on rapidly to a fatal termination, the pulse never exceeding the natural standard. Sometimes, when the inflammation is most intense, it is observed to be extremely small. Morgagni noticed the uncertainty of the pulse in pneumonia long ago. Many

suppose that recovery is rare, when the pulse beats more than 130. Andral makes this remark, and I have no doubt, from the milk-and-water practice which is too frequently adopted by French practitioners in inflammations of important organs, that they may find it so. I often perceive the pulse to rise both in frequency and force after bleeding, when the disease is fast subsiding; in many irritable constitutions it increases in frequency in consequence of considerable depletion, even when the disease is declining.

With respect to the heat of skin, I have similar remarks to make; for although in many cases it may be hot and dry, yet in others it is below the natural standard.

The tongue soon, in the course of this disease, becomes parched and dark-coloured; a dry glossy tongue is always a bad symptom.

It has been too frequently stated in books and in lectures, that the face usually becomes livid and discoloured in pneumonia,—this is an error, being more a symptom of bronchitis, than of inflammation of the substance of the lungs.

Delirium occasionally takes place, but it is far from being a general symptom; when it occurs early, it denotes danger. Mental aberration often occurs, however, after acute diseases in the chest and abdomen have been subdued, particularly by extensive bleeding. It in general soon yields to the use of opiates and stimulants prudently administered.

Much misconception exists respecting position in affections of the chest. It is pretty generally believed that patients lie on the affected side. This is very much the case in pleuritis, and in single bronchitis; but in pneumonia, patients are generally found on the back, particularly in severe cases.

In the very severe forms of pneumonia, particularly where a large portion of the lung is inflamed, and in which extensive effusion into the air-passages takes place, or in cases complicated with considerable local congestions, or in those which terminate in gangrene of the lungs, the powers of life quickly give way, attended by symptoms which are generally denominated typhoid. In truth, this form of the disease has obtained the name of *pncumonia typhoides*. There is undoubtedly such a form of pneumonia, but I object to the adjunct *typhoides*, as expressing erroneous ideas of the pathological condition of the body. This form of pneumonia was very prevalent during the war, among troops stationed in exposed situations along the coast, and in large garrisons where the duty was severe. The soldiers were often seized with it when exposed at night as sentinels; instead of walking about, they frequently stand shivering in their sentry-boxes, the surface continues long chilled, and with a view to fortify themselves, and to produce warmth, they are in the habit of drinking ardent spirits in considerable quantity. In the strongest subjects, I have seen the disease, under such circumstances, run its course to a fatal termination in from forty-eight to sixty hours. Remissions of this complaint sometimes take place, and it is too much the custom at such times, either to omit the necessary remedies, or to be too solicitous about supporting the strength.

The only certain test of the presence of pneumonia, is that derived by auscultation; and in considering this part of the subject, the disease must be divided into stages. In the first stage, or that of invasion, the crepitous râle is heard distinctly, and it resembles the noise which is produced by sprinkling finely powdered salt on the fire. This râle exists also in œdema of the lungs, and pulmonary apoplexy, but these are distinguished from pneumonia by the other symptoms. In this stage, the sound produced by percussion does not differ from that of health. When complete solidification has taken place, neither the crepitous râle nor the respiratory murmur is heard; but in the sound part of the lungs, the respiration will be heard louder than natural, which is called by Laennec "puerile respiration." Laennec says, that bronchophonism exists in certain cases, particularly if the inflammation be seated near the roots of the lungs, or in the upper lobes, in which places the bronchial tubes are the largest. In this second stage, percussion elicits a dull sound over the affected parts, unless the inflammation is confined to a small central space in the substance of the lungs. In the third stage, when the infiltration of pus-like matter begins to take place in the pulmonary tissue, the mucous râle is perceived to a greater or less degree, which Laennec supposes is produced by the introduction of the fluid into the bronchial tubes; when a large portion becomes softened, he calls it an abscess, and says that a very strong mucous or cavernous râle is perceived over its site, with pectoriloquism.

When resolution takes place before the disease has run into solidification, the crepitous râle becomes daily less perceptible, while the natural sound of respiration increases, and becomes gradually more distinct, and at length it is heard without the least crepitous sound; but if solidification has taken place, the cure is invariably accompanied by the return of the crepitous râle, and then as that declines, the respiratory murmur becomes more and more distinct.

I have thought it right not to be too minute in this description, by avoiding the varieties and combinations of these sounds, in the belief that they tend to puzzle the beginner. He may afterwards improve himself, and compare his observations with Laennec's statements; besides which, every professional man ought to possess Dr. Forbes's translation, which contains so much excellent matter. But it is my duty to express my fears, that few will ever arrive at that degree of perfection which Laennec possessed in the detection of all the varieties which he has described.

I have seen two cases within these two years, in which pneumonia existed in one lung, and severe bronchitis in the other; nay, they may exist in the same lung, which will of course mask the crepitous râle.

Inflammation attacks the right lung oftener than the left; it rarely affects both lungs simultaneously. The inferior lobe is much more frequently the seat of inflammation than the others.

*Appearances on dissection.*—On examining the lungs, or any portion of them, in the first stage of inflammation, they will be found red, from the quantity of blood contained in the vessels of the part, and increased in weight. In the



second stage, that of solidification, to which Andral applies the term "softening," and Laennec "hepatization," the diseased part will be readily broken down between the finger and thumb, which cannot be effected in the sound state, and the lung has lost entirely the crepitous feel; if put into water, it will sink at once to the bottom of the vessel. In the third stage, the lung, when cut into, is found to contain a great quantity of reddish or greyish fluid, which oozes out from every point.

The formation of an abscess in the lungs is a rare circumstance. I have seen one, or at most two instances of it. Laennec says he has only seen it five or six times. The granular appearance of an inflamed lung is best seen by tearing it; it seems to be agreed, by the best pathologists, that this is produced by the accretion of matter in the minute air-cells. The appearance of an abscess in the lungs, is sometimes occasioned by an effusion of lymph, which takes place on the pleura, between the lobes; adhesions form round the circumference of the effusion, and when a section of the organ is made, upon a superficial view it is hastily concluded to be an abscess.

A tubercular excavation is also frequently mistaken for an abscess; the history of the case, the appearance of the rest of the lung and that of the parietes, will put the inquirer right. The parietes of a cavern are solid, generally hard, lined with a false membrane, and there are probably portions of broken down tubercle. The large air-tubes contain a secretion, commonly of a grey or reddish color.

In cases of pneumonia, when the substance of the lungs, near the surface, has been the seat of disease, the contiguous pleura almost always suffers; hence we frequently see false membrane, effusions of various degrees of consistence, and adhesions, which, if recent, will be easily separated, but if ancient, will be found firm, and sometimes when partial, very much elongated.

It has been already mentioned, that inflammation of the substance of the lungs sometimes terminates in gangrene, but it is the least frequent termination. Cases are recorded, where the whole lung was found in this state; there are others in which one lobe only was affected, and in others it is more partial. Dr. Bright has given several cases, accompanied by plates of the gangrenous appearances, in his excellent "Report of Medical Cases."

When the lungs have suffered from chronic inflammation, they, in the language of Andral, will be found in a hardened state. When cut into, the knife gives a sensation as if it were dividing cartilage. In this hardened condition, the substance of the lungs sometimes looks grey, at others red; when it is of a grey colour, it frequently has the variegated appearance of Aberdeen granite.

It has not been yet determined in what tissue the disease commences. Some suppose it is in the cellular membrane; others in the air-cells themselves. I have not been able to satisfy my own mind on the subject, but my present impression is, that it is not situated in the air-cells.

*Treatment.*—The lancet is to be used freely, and may be employed later, with less injury to the patient, than in bronchitis; but we must be guided very much

by the stethoscopic signs, by which much blood and strength will occasionally be saved to the patient. I trust no arguments need be used to prevent British practitioners from following the example of the French, who bleed frequently, but in small quantities at a time; indeed, Laennec states that he rarely repeats venesection, except in the cases of patients affected with diseases of the heart, or threatened with apoplexy, or some other internal congestion; and when he does bleed, he directs from eight to sixteen ounces to be taken from the arm, and he even boasts of curing pneumonia without blood-letting. (Page 250.)

Even on this side of the channel, bleeding is not always followed out as it ought to be. Dr. Mason Good, (at p. 436, vol. ii.) in treating of pneumonia, says, "In this case the bleeding should be prompt and copious, at least to eighteen or twenty ounces, and repeated twelve hours after if necessary." I object strongly to this recommendation, both as to the quantity of blood to be drawn, and the long interval between the bleedings; but the reader is referred to my observations on that subject at pp. 259 and 271.

Late in the disease, bleeding must, however, be used in small quantity, and with the greatest caution. The great use of auscultation in treating pneumonia, is, that in general, not only is the practitioner accurately informed with regard to the extent of the disease, but he is told if the sanative process have commenced, when bleeding is, to say the least of it, a doubtful remedy, and in many cases may do harm, by interfering with the powers of the constitution. Nevertheless I am persuaded, from experience in treating the disease, and from examinations after death, that much more mischief is done by bleeding too little, than by bleeding too much; but I am not an advocate for the heroic practice of taking seventy or eighty ounces of blood at one operation; the largest bleeding which I believe I ever took in my life was fifty-six ounces. In general, if the operation be properly performed, thirty or thirty-five ounces will suffice, but the patient should be seen again in the course of two or three hours.

I have the history of a case before me, in which one hundred and ninety-two ounces were taken from one individual; but I am persuaded, that if he had lost two-thirds less it would have been better for him. Several months afterwards he was weak and miserable, and it appeared very doubtful that he ever would regain his health. On one occasion, early in life, I very nearly lost a patient, from whom I had taken, at different times, in the course of four days, one hundred and twenty ounces of blood, but who recovered after the exhibition of stimulants; and within the last ten years, I have seen several cases where considerable injury had been inflicted by very large bleedings, the medical attendants having allowed themselves to be misdirected by the continuance of dyspnoea, which increased after each abstraction of blood. It was evident that this was owing to a want of sufficient blood in the system. In one instance, the patient was on the brink of the grave, with a pale, sunk countenance, and cold extremities; the strongest stimulants were administered, along with opiates. All these cases eventually recovered.

Antimony is of essential use in the treatment of pneumonia; but I would reverse the rule laid down by Laennec, and state that it is to be used as an auxiliary remedy only. Cullen, (in the 371st paragraph,) in alluding to antimony, says, that he has found it useful to exhibit nauseating doses, and in a somewhat advanced state of the disease, that such doses proved the best means of promoting expectoration. The Italian physicians, and particularly Rasori, first exhibited the emetic tartar in very considerable quantity, as a cure for inflammatory diseases. Rasori, it would appear, gives twelve grains during the first day, and as much during the night; if the disease be already much advanced, he gives forty or sixty grains during the twenty-four hours, and goes on increasing the dose, till it amounts to several drachms. For much interesting information on this subject, the reader is referred to a long note by Dr. Forbes, in his translation of Laennec, p. 263.

Laennec, who adopted the Italian practice in France, immediately after a small bleeding, gave one grain of tartar-emetic in three ounces and a half of fluid, which he repeated every second hour for six times. He then omits the medicine for seven or eight hours, if the symptoms be not urgent; but if the oppression become great, with affection of the brain; or if both lungs or one whole lung be attacked, he continued the medicine uninterruptedly, until an amendment took place, indicated by the stethoscopic signs. "Sometimes even, particularly when most of the above mentioned unfavorable symptoms are combined, I increase the dose (says he) of the tartar-emetic, to a grain and a half, two grains, or even two grains and a half, without increasing the quantity of the vehicle. Many patients bear the medicine without being either vomited or purged." (Translation, p. 251.) Indeed it is an extraordinary fact, that the more severe the disease, the less visible effect has antimony on the patient. This observation applies not only to pneumonia, but to bronchitis, in which very large doses do not produce vomiting, and which it is very difficult to bring about by any means. My experience in the use of antimony, and the result of the experiments which are published in the *Lancet*, (vol. ii. p. 536,) lead me to conclude, that vomiting is more speedily produced by a small dose dissolved in a large quantity of water, than a large dose of the drug mixed with a little sugar; but in the latter case, the nausea is more severe, and of longer continuance than in the former. Laennec states that its most constant effect is the rapid resolution of inflammation, and sometimes the equally speedy absorption of the inflammatory effusion. The latter effect is proved in the case of Pemberton, the subject of my second experiment, who was affected with "induration and enlargement of the testicle, which was of a scirrhus hardness." His first dose of the medicine was twelve grains, in half an ounce of water, taken upon an empty stomach; vomiting was not produced for fifty-five minutes. On the following day, the report states that the enlargement of the testicle was found to be diminished about one-third. In some days afterwards, he again took twelve grains in an ounce of the decoction of bark: vomiting did not take place till the expiration of an hour. Again he took, sometime after, twenty

grains in a little sugar, and suffered much less pain and nausea from this quantity than during the preceeding experiments. On the following day, the report states, that "the enlargement of the testicles continued to decrease:" in a short time it was found to be considerably reduced, and was soon quite cured. This man had been many months on the sick-list; the disease had previously resisted all the usual remedies, and the question of extirpation was agitated.

I have no faith in digitalis in the ordinary doses, at least during the acute inflammatory stage. Blisters will be found useful, under the same restrictions as described in bronchitis. I have seen the best effects from opiates, during the decline of the disease, in allaying irritability, and violence of the cough, as well as by producing sleep. Formerly great objections were entertained against the employment of purgative medicines in this disease; but these are now removed. It is certainly necessary to keep the bowels open; for which purpose I generally give a smart dose of physic immediately after the first bleeding, and some hours before the exhibition of the tartrate of antimony, and assist its operation by means of injections. Subsequently, if the antimony do not operate upon the bowels, evacuations should be produced daily by injections, as medicine taken by the mouth will not be retained on the stomach.

The regimen, it is almost unnecessary to remark, should be strictly antiphlogistic; and with a view to prevent vomiting during the antimonial treatment, as little liquid as possible is to be allowed. During recovery from all acute diseases of the chest, visitors should be excluded, as talking, even in an under tone, is injurious to the patient.



## CHAP. IV.

### PLEURITIS.

---

**PHENOMENA.**—As in other acute diseases, this is generally ushered in by a cold stage of greater or less severity. The patient complains of fixed pain in the side, over which he can place his finger, which is described as a stitch, catching and interrupting his breathing every now and then, particularly when he fills his lungs beyond a certain extent. The pain is sometimes so severe, that the patient, in describing it, says it is like a stab with a sharp instrument. In pleuritis the breathing is difficult and anxious; but it is short, and not so heavy and oppressed, in the first instance at least, as in inflammation of the other tissues. There is also cough, which aggravates the pain very much; the expectoration is thin and watery, very different from that in pneumonia and bronchitis. The pulse, generally speaking, is quicker and harder, and the heat of skin is more intense than in pneumonia and bronchitis; but inflammation of the pleura, the most intense and extensive, may take place, and terminate fatally, without being detected by these symptoms. At present, I may remark, with regard to the heat of skin, that it is greatest over the thorax in pleuritis, and very often I have felt it much increased over the seat of the disease, at which point external pressure is much complained of. The tongue, however much furred it may be, soon becomes dry. The urine is scanty, and high-coloured. The functions of the brain are also sometimes disturbed.

There is a painful affection, commonly ascribed to the intercostal muscles, and termed pleurodynia, which gives rise to all the symptoms above described, and it is impossible to determine the one from the other but by auscultation. A symptomatical physician may now and then guess right, but it is only to be considered as a guess, for three such cases have occurred to me within a very short space of each other, one only of which proved to be pleurisy, although from the slightness of the symptoms, and the character of the patient, who was always complaining for trifles, I least expected to find it. Dr. Ferrier, (at page 86, of his 2d vol.) states the case of a boy, who died from extensive inflammatory action of the pleura, and effusion into the pericardium, who nevertheless had “no cough, no difficulty of breathing, nor pain in his breast, and I could not find, (says Dr. Ferrier,) from the most careful inquiry, that he had ever made such complaints. There was great paleness over the whole skin. He was torpid; without delirium, or the symptoms of oppression common in

typhus." In his observations upon this case, he states, "In this case, an active inflammation through the whole extent of the pleura, producing exudation and adhesions, was not indicated by any symptom during the continuance of the complaint."

*Stethoscopic signs.*—In pleurisy these signs are of less importance in directing the treatment, than in pneumonia and bronchitis, because there is no particular sound elicited by the stethoscope in pleurisy, till the inflammation has run to its ultimatum, and has produced effusion; but great advantage is nevertheless obtained from the negative proof afforded by auscultation, which will inform us if either of these two diseases exist. Independently of this, however, the stethoscope is of use in pleuritis, by informing us when effusion really exists, which, it is admitted, cannot be done by the ordinary signs.

In the early stage of pleuritis, the respiratory murmur is less distinct, but not otherwise changed, over the site of the diseased part. When effusion takes place, the sound in the lower part of the chest becomes dull, and when the patient is desired to speak, his voice is heard through the stethoscope, at the diseased part, small, sharp, and very tremulous, to which Laennec has given the name *œgophony*. When the effusion is very extensive, and in considerable quantity, the sound elicited by percussion is very dull, and the sound of respiration is not hard, unless at points where old adhesions exist, which prevent the lungs from being compressed and forced away from the ribs. On examining the naked chest, when there is great effusion, that side of the thorax is perceived to be the largest; the ribs are found more distant from each other, and more fixed during respiration, than on the healthy side. *Ægophony* exists in hydro-thorax also; but this is of little consequence, as the general history of the case, and local symptoms, must always be appealed to, and weighed as necessary parts of the evidence in each case.

It must be recollected, that pneumonia and pleurisy frequently co-exist; but neither is that circumstance of much consequence, being both inflammatory diseases, and requiring the same general remedies.

*Appearances on dissection.*—The pleura, when inflamed in the first stage, shews a great number of red points, which are sometimes produced by slight ecchymosis in the cellular membrane, beneath the pleura; red vessels are also frequently observed, and the spaces between the vessels, and between the punctæ, appear natural. The pleura is rarely found thickened, although it may appear to be in that state, the deception arising from the deposition of coagulable lymph, the removal of which shews the pleura without alteration of structure. It has frequently occurred to me, in chronic pleuritis, to be able to separate what appeared to be two and even three layers of new membrane. There is often found extensive effusion of a serous fluid like whey, exactly similar to that seen in the abdomen in peritonitis. Sometimes we find the lungs attached to the pleura lining the general cavity, by an intermediate deposition of lymph; when recent, the parts are easily separated, and there is the best evidence for

believing that the new matter becomes organized. Occasionally, (particularly in chronic pleuritis,) we find both the pleura pulmonalis and costalis inflamed, and much thickened by the deposition of lymph, with or without an effusion of serum mixed with lymph, which resembles thick pus; masses of lymph, weighing half an ounce or more, are sometimes found in the bottom of the cavity. If there be no old adhesions, and the effusion be large, the lung will be found greatly compressed and lying close to the spine, perhaps without any alteration of structure. Mortification is one of the rarest results of inflammation of the pleura. Ulceration is also rarely met with; I have seen two instances of this lesion; the ulcerations were extensive, and affected not only the pleura pulmonalis, but the costalis also, as well as that part which forms the mediastinum. In one case, of which I have a very beautiful representation, on exposing the contents of the thorax, six large ulcerated spots were observed upon the anterior surface of the right lung, one of which was two inches in length, and above an inch in breadth, occupying almost a regular oblong space, whilst the rest approached to the circular form. There were eight or nine ulcerations on corresponding parts of the pleura costalis, of an oval shape,—one very large; there was also one above two inches in length on the mediastinum. The pleura was very vascular, and the margin of each ulceration was red, thickened, and somewhat indurated; no trace of the pleura could be perceived on the ulcerated surfaces, except here and there a small ragged portion was met with. The ulcers were covered with a puriform matter. The lung was somewhat compressed, and on making incisions through the ulcerated parts, its substance was found to be red and hard; a state of the organ which extended to no great depth, in some places not greater than a line, and no where more than about the third of an inch; the rest of it being engorged. In this case, which I did not see till within a few hours of the fatal termination, no suspicion was entertained of the true nature of the affection; the treatment was conducted by two physicians, for whose talents and practical experience I entertain the highest degree of respect; but it may be mentioned that neither of them used the stethoscope. At first, it was supposed there was some pulmonary affection, for which the lancet was used; but very soon the vital powers began to sink, after which the disease was denominated typhus fever, and treated accordingly.

*Treatment.*—Little need be said respecting the treatment of pleurisy, farther than that bleeding is to be had recourse to repeatedly and copiously. Leeches applied over the seat of the pain, are often of very singular benefit; in some cases no other means of detracting blood will be required. Antimony may be employed, together with laxatives and an occasional opiate. The antiphlogistic regimen is absolutely required, and blisters are often useful.

In pleurodynia, a warm bath, and a dose of Dover's powder, will, in general, be sufficient to mitigate the violence of the pain; a bandage, placed tightly round the thorax, is serviceable, by preventing the motion of the ribs. A good practical man, however, will always be found to act on the safe side; and when in



doubt, he makes it a rule to give the patient the benefit of that doubt, by employing the means required in the more severe disease.

Dr. Rush, in the 4th volume of his inquiries, in considering the probability of a connection between the morbid excitement at the neck of the bladder, and the safety of more vital parts of the body, states, that "the idea of this connection was first suggested to me four and twenty years ago, by the late Dr. James Leiper, of Maryland, who informed me he had sometimes cured the most dangerous cases of pleurisy, after the usual remedies had failed, by exciting a strangury by means of the tincture of Spanish flies, mixed with camphorated spirit of wine." Page 35.

I have only further to state, that relapses, in all inflammatory complaints of the chest, are generally to be attributed to imprudence in diet, and to the too early exertion of speaking; therefore it is always safer to continue the antiphlogistic regimen a day or two longer, than to allow food to be taken a single day too soon. The practitioner finds himself often foiled on both these points, by the imprudence of patients and attendants; under such circumstances, it is an excellent plan to keep the patient slightly under the influence of antimony, which will prevent the generality of people from feeling much inclination to eat or speak.

#### CHRONIC PLEURITIS.

ACCORDING to Laennec, there are three kinds of chronic pleurisy:—1st, That which is chronic from its origin; 2dly, Acute pleurisy becoming chronic. 3dly, Pleurisy complicated with certain organic productions on the surface of the pleura. I shall follow a different plan in this work, and first describe the chronic pleurisy which terminates in empyema, and afterwards that which terminates in permanent contraction of the chest.

*Empyema.*—This term implies the existence of matter in the chest, the effect of chronic pleurisy, or the bursting of a pulmonary vomica into the cavity of the pleura; of this last affection I shall speak, after treating of phthisis.—Whether the empyema be produced by a pleurisy which was chronic from the first, or considered as the termination of the acute form of the disease, the effect is the same,—there being generally dyspnoea, the breathing being easier in the erect posture; dry tickling cough; hectic fever; enlargement of the side of the thorax when compared with the other, the intercostal spaces being increased; the patient cannot lie except on the diseased side: sometimes fluctuation may be felt. This form of the disease appears to have been well known to Hippocrates, although he confounded it with pneumo-thorax.\*

*Stethoscopic signs.*—Percussion gives a dull sound, and the respiratory murmur is not heard, which will be puerile on the other side; but here we must recollect, that the effusion may be double, although this is a rare circumstance.

*Treatment.*—When effusion is discovered, the sooner the chest is tapped the better; as remarkable recoveries have taken place, shewing that there is still

\* An excellent paper on Empyema, &c. by Dr. Duncan, jun. in the 93d No. of the Edin. Med. and Surg. Journal.



some hope. There is, however, some difference of opinion respecting the propriety of drawing off the matter all at once, or by degrees. Although my experience on this subject is not great, yet I am induced to believe that the more quickly the matter is removed the better. A most interesting case, successfully treated by Dr. Pitcairn, of Edinburgh, is recorded in the 2d vol. Edin. Med. Chir. Transactions, p. 229. During recovery, we should be on our guard to prevent, by means of regimen, a renewal of the inflammation. Instances are upon record, in which the matter found its way out of the chest through the parietes, and through the bronchial tubes also.

The other kind of chronic pleurisy to which I wish to allude, is that which leads to permanent contraction of the chest. The deformity is readily perceived on looking at the naked chest; the affected side is found to be narrower than the other, and the length is equally diminished in consequence of the ribs being drawn closer to each other. The muscles are also much smaller, which adds to the disproportion of the chest. The patient leans to the affected side; in many cases so much so, as to make a patient appear as if he had an affection of the spine; this happened in Dr. Pitcairn's case above quoted.

Laennec states, that it was long before he had an opportunity of ascertaining to what cause the contraction of the thorax was owing, which he at last discovered to depend on fibro-cartilaginous adhesions, between the pleura pulmonalis and costalis. He nevertheless thinks that a degree of contraction is produced by the common cellular adhesions when very extensive; for he states, that in every case wherein he found one lung adhering throughout, by means of a pretty copious cellular tissue, he has always thought that side of the chest narrower than the other. I have seen several cases of contraction of the chest from this cause; one where the contraction was in the left side, and evidently connected with some affection of the heart and pericardium. Some years ago, when accidentally at Chichester, Dr. Forbes, the accomplished translator of Laennec's work, was kind enough to take me to visit a patient who was affected in this manner, and in whom the contraction succeeded, if I remember rightly, to a severe attack of acute pleurisy.\*

\* Hydro-thorax will be treated of in the chapter on Dropsy, in the 2d vol.

## CHAP. IV.

### HÆMOPTYSIS.

---

THIS term signifies a discharge of blood from the air-passages, which occurs principally under three forms:—1st, A general exhalation from the mucous surface of the bronchial tubes. 2dly, From apoplexy of the lungs. 3dly, From an erosion of a blood vessel in a tubercular excavation in the lungs, and which falls to be considered when treating of phthisis.

*The first variety* is the most common, and is not generally attended with much danger. It frequently attacks women at the monthly periods, when the menstrual discharge is more scanty than usual, or is entirely suppressed; girls are often so affected at the age of puberty, immediately before the catamenia should appear; but the male sex are not exempt from it. I have seen it appear in men, upon the drying up of an old sore, or the disappearance of a long-standing eruption; it sometimes succeeds to mental affliction. The discharge is generally preceded by some constitutional disturbance; the bowels are found out of order, the tongue foul; the patient has passed somewhat restless nights, with more or less fever, and feels most comfortable in the half-erect posture. At last there is cough, which is often constant and distressing, with more or less dyspnœa, particularly when moving about. The pulse varies much according to the age and constitution of the patient, and the period of the disease; but generally it is quick and bounding. I have commonly seen this form of the disease creep on insidiously; but at the same time it must be confessed, that a bloody expectoration sometimes takes place suddenly, immediately after the occurrence of cough and dyspnœa. The expectoration has a peculiar appearance; it resembles red currant jelly,—sometimes not so much tinged, but like a mixture containing different proportions of apple-jelly with red currant; it is sometimes copious, but in general the quantity discharged is moderate. Sometimes, however, the expectoration is of a mixed kind, small masses of coagulated blood being observed. Occasionally, indeed, the discharge is quite bloody, but moderate in quantity, and very frothy; but in some cases pure blood in large quantities is discharged. On all occasions, it is much increased by every exertion, either of the body or the voice. According to Laennec, the chest is perfectly sonorous. On applying the ear, the crepitous râle is not heard as in pulmonary apoplexy; but there exists a mucous râle, which is more or less extensive, according to the quantity of blood effused into the air-passages.

*Appearances on dissection.*—I have never been present at a dissection of a person who died of this form of the complaint; but Laennec states, that, “on examining subjects who have died of bronchial hæmorrhage, or while labouring under it, more or less of coagulated or fluid blood, is found in the bronchia. On the surface of the coagula, we sometimes observe fibrinous concretions in the form of polypi. The mucous membrane is commonly a little softened, and impregnated or tinged with blood through its whole depth.”\*

*Treatment of the first variety.*—This is in general very simple. Blood-letting is not necessary, unless the patient be plethoric, or there are marks of an irregular determination of blood, which we wish to remove from the lungs, when one bleeding will in general suffice. The leading points to be attended to, are the following:—Perfect rest, silence, abstinence from every stimulant; a very small quantity of food is to be taken at a time. The patient should be placed, if possible, in a large, cool apartment, with light clothing; and a pretty smart action is to be kept up on the bowels, by means of frequently repeated laxatives. If, however, the discharge still continue, with a strong pulse, small doses of the tartrate of antimony are to be used, so as to produce some degree of nausea; but the most potent remedy with which I am acquainted, is the acetate of lead, which I commonly prescribe in such cases, in doses of two, three, or four grains every third or fourth hour; but I never use it till the plethora is considerably reduced. A great many other astringents have been employed, as sulphuric acid, alum, kino, the bark of the pomegranate, and the ratany root.

*The second variety*, or that which proceeds from pulmonary apoplexy, is marked by a greater degree of hæmorrhage, which is sometimes so violent as to resist all medical treatment. The pathology of this variety of hæmoptysis, was, as Dr. Forbes remarks, entirely unknown before the publication of the first edition of Laennec’s work, although some obscure notices had been given by others before that period.

*Symptoms.*—This disease is, in general, preceded by symptoms common to hæmorrhages from other parts of the body; such as chilliness,—cold extremities, followed by flushes of heat and redness of the cheeks, head-ache, quick and extremely hard pulse,—palpitation of the heart. The discharge from the lungs is attended with dyspnœa,—suffocating feeling in the chest, sometimes, according to Laennec, with great pain,—oppression at præcordia,—sense of rawness of the throat, and a saltish taste in the mouth. The expectoration consists of bright and frothy, or black and clotted blood, sometimes intermixed with saliva or a little mucus. The pulse is frequent and full, with a feeling of vibration; the heat of skin is not considerable; sometimes I have seen profuse perspiration. The spitting of blood is copious, and returns by fits with cough, oppression, anxiety, intense redness or extreme paleness of the face, and coldness of the extremities. These last mentioned symptoms are the most frequent and striking. When the hæmorrhage is very great, says Laennec, “it comes on sometimes with a very moderate degree of cough, and is

\* Forbes’s Translation, page 128.

accompanied by a convulsive elevation of the diaphragm, like that which takes place in vomiting. This accounts for the expression, "*vomiting of blood*," which is used by most persons who have suffered in this way. He thinks that part of the discharge very often comes from the stomach, and that hæmatemesis frequently co-exists with hæmoptysis. Laennec has known ten pounds of blood lost in this manner, in forty-eight hours, by a young man who died under the hæmorrhage. In other cases, he has seen about thirty pounds lost in a period of fifteen days; but, in general, the discharge does not exceed twelve or fifteen ounces in twenty-four hours, and in some cases, not three or four.

Percussion, in general, gives no information. Auscultation, however, furnishes us with two principal signs of the pulmonary apoplexy,—the want of the sound of respiration over a circumscribed space, which may be more or less extensive, and a crepitous rôle round this space.

*Appearances on dissection.*—Having had but a few opportunities of observing these appearances, I shall take the liberty of copying Laennec's account. "Some part of the pulmonary system has undergone great changes, being indurated to a degree equal to the most complete hepatization. The induration, however, is very different from the inflammatory affection of the lungs distinguished by this term. It is always partial, and scarcely ever occupies a considerable portion of the lungs; its more ordinary extent being from one to four cubic inches. It is almost always very exactly circumscribed, the induration being as considerable at the very point of termination as in the centre. The pulmonary tissue around is quite sound and crepitous, and has no appearance whatever of that progressive induration found in the peripneumatic affection. The substance of lung is indeed often very pale around the hæmoptysical induration; sometimes, however, it is rose-coloured, or even red, as if tinged with fresh blood; but, even in this case, the circumscription of the indurated part is equally distinct. The indurated portion is of a very dark red, exactly like that of a clot of venous blood. When cut into, the surface of the incisions is granulated, as in a hepatized lung; but in their other characters, these two kinds of pulmonic induration are entirely different. In the second degree of hepatization, along with the red colour of the inflamed pulmonary tissue, we can perceive distinctly the dark pulmonary spots, the blood-vessels, and the fine cellular intersections; all of which together, give to this morbid state the aspect of certain kinds of granite, as has been already observed. In the induration of hæmoptysis, on the contrary, the diseased part appears quite homogeneous, being altogether black, or of a very deep brown, and disclosing nothing of the natural texture of the part, except the bronchial tubes and the larger blood-vessels. The latter have even lost their natural colour, and are stained with blood. The veins of the affected part, and also those adjoining, are sometimes filled with a firmly coagulated and half-dry blood. In scraping the incised surfaces of these parts, we can detach a small portion of very dark, half-congealed blood, but in a much less proportion than we can press out the bloody serum from a hepatized lung. The granulations on the



incised surfaces have also appeared to me larger than in cases of hepatization. Sometimes the centre of those indurated masses is soft, and filled with a clot of pure blood.

“This morbid affection is evidently produced by an effusion of blood into the parenchyma of the lungs, in other words, into the cells. From its exact resemblance to the effusion that takes place in the brain in apoplexy, I have thought the name pulmonary apoplexy very applicable to it. Some examples have occurred of sudden death from hæmoptysis, wherein the substance of the lungs was found lacerated, and containing clots of blood. Corvisart mentions one extraordinary case of this kind, in which the extravasation had lacerated the lung, and filled the cavity of the pleura. The hæmoptysical engorgement above described, is only a lesser degree of the same affection, in which the effused blood (still in some degree under the influence of vital action,) coagulates in the air-cells, in such a manner, as to form an intimate union with the pulmonary tissue, very different from what would be produced by the mere physical coagulation of the blood. We sometimes find two or three similar indurations in the same lung, and frequently both lungs are affected at the same time. They take place most commonly in the central parts of the lower lobe, or towards the middle and posterior part of the lungs; it is consequently on the back and inferior part of the chest, that we ought to search for them with the stethoscope.

“This affection is as easily distinguishable from the congestions that take place after death, as from the alterations produced by the peripneumony. The sanguineous congestions of the dead body consists of an accumulation of blood intermixed with serum, often spumous, which flows plentifully on an incision of the part, and tinges the lungs of a livid or vinous colour. Being the mere consequence of gravitation, the engorgement is found most considerable in the most depending parts of the lungs, and gradually lessens towards the superior parts. Where most engorged, the part still retains some crepitation, and the incised surfaces are never granulated, even when the congestion is so great as to destroy the spongy character of the lung. By washing, we can, in every case, remove all the red, and restore the lung to that sort of flaccidity which it possesses when compressed by a pleuritic effusion. The engorgement of hæmoptysis, on the contrary, is accurately circumscribed, very dense dark-red or brown, granulated, and almost dry when incised, and grows pale by washing, but without losing any part of its consistence. Whatever may be the severity of this disease, resolution seems to take place with considerable facility, since we find a great many cases of recovery after severe hæmoptysis. I have not had many opportunities of tracing the progress of this resolution by morbid dissection; but in the small number of cases which I have met with, it has appeared that the indurated parts passed successively from dark-red, to brown and pale-red; and that, in proportion as the colour faded, the parts lost their granular texture and their density. I do not think that this obstruction is followed, at least constantly, by œdema, as is the case with the obstruction of perip-

neumony. When the resolution is complete, it leaves no trace of disease in the pulmonary substance, since 'I have never been able to find any vestige of the induration in subjects who had been affected with severe hæmorrhage at a period of some years—or only some months—anterior to their death.'\*

*Treatment of the second variety.*—The treatment depends very much upon the condition of the lungs, the age and constitution of the patient, and upon the quantity of blood already lost. The pain of bleeding, in every case of bloody discharge from the lungs, is very bad; because it is bleeding for a name, without reference to pathological considerations. In this variety, however, copious venesection is to be employed early, and carried to such an extent, as will render a repetition generally unnecessary. It is employed to reduce plethora, and to moderate the action of the heart and arteries,—to change the determination of blood quickly,—and, on some occasions it is to be carried the length of inducing syncope. It requires considerable experience to act properly on such occasions; for sometimes, in very stout plethoric people, we ought to take away a large quantity of blood, say to the extent of three or four pounds; and to prevent syncope from taking place before we obtain a sufficient quantity, the operation should be performed when the patient is in the recumbent posture. When we wish to induce syncope, or to alter the tide of the circulation as quickly as possible, and at a small expense of blood, a large orifice should be made, or a vein in each arm opened at the same time, and the patient kept in the erect posture. It is curious to observe, that Laennec recommends bleeding in large quantities, even to syncope, in this complaint, and pursues quite an opposite course in pneumonia. With regard to bleeding in this disease, he uses the following language:—"But the extreme danger which attends the hæmoptysical induration, and possibility of its resolution, ought to make us boldly use copious venesection from the onset of the disease. One blood-letting of twenty or twenty-four ounces on the first or second day, will have more effect in checking the hæmorrhage, than several pounds taken away in the course of a fortnight. *It is even beneficial, in general, to induce partial syncope by means of the first bleeding. In cases of this kind, the fear of exhausting the patient's strength is without grounds, since we know that the most copious venæsection falls short of the loss of blood sustained from pulmonary hæmorrhage, in young and robust subjects, even in the course of a few minutes; while the debilitating effect of the hæmorrhage is infinitely greater than the loss of blood produced by the lancet.*"

After great losses of blood, whether by the lancet or otherwise, the state of the circulation must be carefully watched; much more carefully, the larger the quantity lost; and we must take care not to lose the vantage ground, by subsequent imprudence on the part of the practitioner, or on that of the patient. For this purpose, perfect rest, quietness, and complete silence, are to be enjoined; cool air is to be freely admitted; but I have seen great injury done by keeping the temperature of the body too low, for too long a period, which pro-

\* Forbes' Translation, page 194.

motes the tendency to internal congestions. One bleeding ought in general to suffice, provided it be carried far enough. The circulation is afterwards to be controlled, by nauseating doses of antimony; the rigid employment of the antiphlogistic regimen, and the exhibition of laxatives, are to be pursued. But if the patient have lost too much blood before we are called, or should the hæmorrhage continue after copious bleeding, then we must trust to the effects of the acetate of lead, in considerable doses, which I have seen useful in suppressing hæmorrhages, which were afterwards proved by dissection to have proceeded even from a ruptured blood-vessel in the lungs.

Drawing blood by leeches, is scarcely ever admissible, unless to mitigate some local pain in the chest, which, however, is better effected by a blister.

If the patient be thirsty, acidulated drinks may be allowed.

Some have recommended ice to be piled upon the chest in such cases, which surely must be a dangerous practice.

Hæmoptytis sometimes take place in consequence of aneurism of the aorta, of which I have seen three cases, all of which proved fatal; the blood found its way into the bronchial tubes, by absorption and ulceration of that part of the lung which came in contact with the aneurismal sac, and which, in fact, formed at last a part of the sac itself. In two of these instances, the parts were strengthened, and life preserved for a considerable time, by the usual deposition of coagulated blood found in aneurisms, till at last the fatal hæmoptysis occurred, and the patients died in a few minutes. In the third case a deposition of coagulable lymph, had perhaps for a long time prevented the eruption of blood, which at last, however, took place, but soon suppressed by moderating the force of the circulation by bleeding; but it returned repeatedly, and at last carried off the patient, almost in a moment. On dissection a considerable portion of the lung was found injured, but the loss was partly repaired by a thick and dense layer of coagulable lymph, the upper part of which was found detached, at which point the blood had passed into the bronchial tubes.

I have seen hæmoptysis take place, probably from hypertrophy of the heart; and I once witnessed a dissection, where complete apoplexy of the whole of one lung had taken place, the other having been for years, as far as we could judge from the history of the case, in the most perfect state of hepatization, from chronic inflammation. The patient complained occasionally of attacks of asthma, and experienced much embarrassment in going up hill or ascending a stair. He died in a moment, after discharging a mouthful or two of blood. A drawing, shewing the external appearance of both lungs, and their internal structure, is in my museum.

## CHAP. V.

### PHTHISIS PULMONALIS.

---

**PHENOMENA.**—If a person be frequently apt to take cold from slight causes,—if his lungs be easily irritated at all times, so as to produce coughing,—is of spare habit and ill-formed thorax,—and if many of his predecessors have died of phthisis, considerable apprehensions ought to be entertained for his safety. Care and good management may, however, be useful in meliorating symptoms and warding off danger.

If an individual have laboured under bronchitis, peripneumony, or pleurisy, beyond the ordinary period, in spite of the usual means employed early, tubercles may be suspected to exist already, or their formation is to be dreaded; and if any predisposition have been shewn, the result of the case will be still more doubtful. If he continue coughing, losing flesh, and looking pale, the pulse becoming more and more frequent, with increasing dyspnœa, and expectoration of a copious mucus, almost colourless and semi-transparent, the chances are much against him; particularly, if the sound elicited by percussion be dull,—if the respiratory murmur be not heard at all, or only indistinctly, the patient may be almost declared to have confirmed phthisis. If the skin become discoloured, with diminution of flesh,—if shooting pains be felt in the breast and back, between the clavicle and scapula,—if there be frequent cold shivering,—if the nails are turned in, the pulse still increasing, with viscid perspirations,—if the expectoration be cream-coloured, looking granular, adhering firmly to the vessel; or, if should look bloody, or like milk-and-water, with a cheesy-looking matter floating on it, a still worse opinion of the case may be formed. If, however, he be troubled with hæmoptysis now and then,—if the expectoration continue for some time,—if his hair look mangy, with increasing dyspnœa and weakness,—and if the sound in the upper part of the chest, instead of being dull as before, is observed to become clear,—if a gurgling noise is heard on applying the ear to the chest, or if, when the person speak, the sound of the voice appears very clear through the stethoscope,—the person may, without any doubt, be pronounced to be affected with pulmonary consumption.

Sometimes the first and most important symptom throughout the affection, is hæmoptysis. I have seen some cases where diarrhœa came on with the cough, and continued throughout the rest of the patient's life; in general, however, it exists for the last six weeks or two months only. I have rarely seen a person



live beyond twelve weeks, after the first appearance of diarrhœa, accompanied by griping pains in the bowels. Sometimes the bowel-complaint alternates with violent perspirations, but occasionally they co-exist. Sometimes an individual has no pain from the beginning; at others, the pain is occasionally very acute, not only in the bowels, but in the thorax. Occasionally there is little cough, and little or no expectoration, the mildness of the symptoms causing great uncertainty in forming a diagnosis; and truth compels me to acknowledge, that auscultation and percussion, cannot always remove the mystery which hangs over the case; but as soon as the tubercles soften, and become discharged through openings into the bronchial tubes, then the stethoscope will commonly be of use.

According to Louis, who has written the best treatise upon this subject which has yet appeared, hæmoptysis occurred in two-thirds of his phthisical cases, and on many occasions it took place before the expectoration and the cough. He has been led to conclude, that a profuse hæmoptysis renders the existence of tubercles in the lungs very probable. This symptom shewed itself more frequently in women than men, in the proportion of three to two.

It is frequently difficult to say, whether the pain the chest be owing to an affection of the muscles, or depends on the formation of tubercles in the lungs; in the latter stages, there can be no doubt that it is produced by pleuritic inflammation, in the course of the formation of adhesions, which are almost constantly found when a cavern is situated near the surface of the lung.

Diarrhœa shewed itself in all Louis's cases, and when I come to state the appearances on dissection, it will be seen that this symptom is produced by irritation and ulceration of the bowels. Sometimes the appetite is not at all impaired, even when diarrhœa prevails; at other times the appetite is bad and fastidious, with frequent attacks of nausea, and sometimes vomiting. Occasionally there is pain in the right hypochondriac region. The tongue presents various appearances; sometimes in the first part of the disease, it is perfectly clean and moist; at others loaded, exceedingly rough and cracked, with considerable redness at the edges; and in the last stage, when there are extensive ulcerations in the bowels, it has the same appearance as that already described in dysentery, viz., as if skinned, perfectly raw, red and glazed. The lining membrane of the mouth and tongue is sometimes covered with aphthous ulcerations, which aggravate the patient's sufferings very considerably. Occasionally the epiglottis, pharynx, and œsophagus, are similarly affected, producing great thirst, and difficulty in swallowing fluids as well as solids.

*Appearances on dissection.*—Bayle divided phthisis into nearly as many species as there have been diseased appearances found in the lungs, but Laennec and Louis, on the other hand, think there is only one species of phthisis, the tubercular. The latter author states, that he has not examined the body of one subject, without finding as the principal lesion, tubercles or tubercular excavations, or the demi-transparent grey granulations; he joins Laennec, therefore, in

stating, that the existence of tubercles in the lungs is the cause, and constitutes the proper character of phthisis.

Before describing the various morbid appearances found in subjects who have died of phthisis, I shall seize the opportunity of stating some particulars respecting those accidental formations which are called tubercular. They are bodies of a yellowish dull white colour, variable in consistence, which subsequently soften. When situated in the lungs, they are sometimes expectorated by the bronchi, given rise to excavations more or less extensive. They are always more numerous, larger, and more advanced in their developement, towards the superior part of the lungs, than in the lower lobe. Out of one hundred and twenty-three dissections, Louis mentions having seen two exceptions only to this rule; for some years past I have seen one exception only, and in it the superior lobe was quite healthy. According to Laennec, tuberculous matter may be developed in the lungs under two forms,—insulated bodies, and interstitial injection or infiltration. He divides the insulated bodies into four kinds,—miliary, crude, granular, and encysted; the second has three varieties,—the irregular, the grey, and the yellow. Under any of these forms, the matter presents, in the early stage, a grey semi-transparent substance, which gradually becomes yellow, opaque, and dense; it afterwards softens, and gradually becomes converted into a fluid, like thick cream or pus, which being expelled through the bronchi, leaves cavities in the lungs, which were formerly termed ulcers.

*Miliary tubercles.*—This variety of tubercles is most common. The size varies from a millet to a hemp seed, very irregular in shape. At first they are distinct, and afterwards become grouped together, and very often run into one another, so as to form one mass. A small yellowish opaque point appears near the centre of each tubercle, which gradually enlarges, till it involves the whole mass; it cuts like cheese, and constitutes the crude tubercle. Sometimes the miliary tubercles do not coalesce, but continue to the last distinct, and sometimes acquire considerable size. Sometimes distinct masses are seen, which are frequently the product of many tubercles united together.

*Granular tubercles.*—These were first described by Bayle, and were considered by him to be distinct from tubercles. But Laennec and Louis, assert that they are nothing more than the ordinary tubercle in its first stage; the former distinctly states, that the only difference between these granulations and the yellow tubercles, is that between green and ripe fruit; “besides (says he, at page 275,) the miliary granulations are never met with, except in lungs in which there exist at the same time other tubercles of a larger size, and sufficiently advanced to render their character no longer matter of question.” My observations oblige me to dissent from this statement. Within the last six years, I have seen a considerable number of instances, in which granular tubercles pervaded the whole of both lungs; they were all nearly about the same size; the surrounding pulmonary tissue was of a red colour. Several drawings shewing these appearances, are in my port-folio. In these cases, there was little cough, and very slight expectoration; and in one adult the lungs weighed

nine pounds and three quarters. Three cases were children ; in two of which tubercles were found on the arachnoid coat of the brain also ; and in one, the membrane on one of the hemispheres were ulcerated in a great many points. This kind of tubercular formation in the lungs has long engaged my attention, and I feel convinced they are the air-cells distended and enlarged by a diseased deposition, probably the consequence of inflammation of their inner membrane. A similar appearance may be produced by pouring a little quicksilver into the air-passages of a rabbit, if it be allowed to live for some days after the experiment. At one time I felt disposed to believe, that bronchitis was the cause of almost all tubercular formations in the lungs ; which opinion appeared to be so far confirmed by a well known fact, that the majority of individuals who die of phthisis, attribute their illness to what they call a neglected cold ; but I have been induced to abandon this opinion.

*Encysted tubercles* are rare. I have seen cases where one, two, or three encysted tubercles were found in the lungs, about the size of a filbert, inclosed in a cyst. Two of the cases died of hooping cough, and another of the disease called *tabes mesenterica*. In all these cases, the surrounding substance seemed somewhat firmer and redder in colour, than usual, but in other respects, there was no disease in the substance of the lungs. Laennec says they are rare, and Louis declares he has only seen one instance of this formation. On making a section of the tuberculous mass, it appears of a whitish colour, semi-transparent, and of a texture like hard cheese ; but for a more minute account, I must refer to the works of the above authors.

With respect to the *tuberculous infiltration*, I have to observe, that it is commonly of a greyish white colour, sometimes with a rose tint, and is found either surrounding tuberculous excavations, or existing in large masses, occupying the whole lobe of a lung, having no connexion with the military tubercle ; indeed, I have a preparation in which every part but the superior lobe is infiltrated with this matter, and I have an idea, that this may be one of the ultimate terminations of the granular tubercle. This opinion is somewhat supported by Laennec's description of the grey tuberculous infiltration.

According to Laennec, tubercles first shew themselves in the top of the upper lobe, more particularly on the right side ; while Louis states, that they are more frequently met with in the left lung. My own experience corroborates Laennec's statement.

An important question is still undecided, and perhaps will remain so, as to the cause of this singular formation. Some insist, that tubercles are the product of inflammation of a peculiar kind ; while others, with as much confidence, allege that they have nothing whatever to do with inflammation, except in as much as they sometimes excite it by mechanical irritation. Dr. Baron maintains that tubercles are primitively hydatids ; and although he has supported his doctrines with much learning and ingenuity, yet I feel persuaded he has not convinced a single pathologist.

The body of a person who has fallen a victim to this very dreadful disease,



is found greatly emaciated, sometimes to the last degree, and the chest looks contracted on itself, which may, however, be a deception produced by the general emaciation. But Laennec thinks the contraction of the chest is real, and is to be attributed to two causes. *1st*, To the existence of pleurisies, to which phthical patients are extremely liable. *2dly*, To the attempts made by nature to cure phthisis. On opening the thorax, the heart is sometimes observed to be small; Laennec says, it is almost always remarkably so. The lungs are sometimes found adhering throughout their whole extent to the ribs, and the left lung is frequently attached to the pericardium, which is occasionally distended with serum. Sometimes one side of the thorax contains a puriform matter, with a considerable quantity of air, the result of a vomica bursting into the cavity, leaving a communication open with the bronchial tubes; when this is discovered, the person is said to be affected with pneumo-thorax, which may be ascertained by the splashing noise which is heard, when the patient's body is shaken by the shoulders; the stethoscope communicates a peculiar sound, called the *metallic tinkling*. The powers of the constitution, however, employed to prevent this accident are generally successful, by effusion of lymph, and the agglutination of parts. These adhesions are mostly found at the superior lobes, and sometimes are so dense, that it is impossible to separate them with the fingers, without tearing the lung itself.

On removing the lungs from the body, they are found to be much heavier than natural; one case I have already mentioned, in which they weighed nine pounds and three quarters. Notwithstanding the assertion of Laennec to the contrary, it has occurred to me several times to see the marks of the ribs left upon the posterior and lateral parts of the lungs, when they were very heavy; I have seen it in two cases, where one lung was extremely dense and large, the effect of long protracted chronic peripneumony.

On making a longitudinal section of the lungs, which will usually be found "to cry under the knife," we sometimes find one excavation only, which may be full, none of the contents having yet found their way into the bronchial tubes; and when solitary, it is almost always in the superior lobe. In general, however, many cavities are found, more or less filled with softened tuberculous matter, and the most striking difference will be observed in the progress of the tubercles in different situations, being commonly farthest advanced in the superior parts; occasionally they present the appearance of fresh crops. Sometimes the lung is found studded with miliary tubercles, affecting the pleura also, and most commonly some of the bronchial glands will be found enlarged and hard, sometimes melanotic. I have met with this condition of the lungs only twice or thrice in children. I have seen several dissections in which the tubercles, called *granular* by Bayle, were found in immense numbers, dispersed with great regularity throughout the whole substance of the lungs, with intervening spaces of a red colour, having the appearance of the roe of a salmon.

Occasionally we find a chain of excavations extending throughout the whole lung, communicating with each other; the tubercles having become successively



softened, and then discharged. In these excavations bands are seen stretching in every direction, like the fleshy columns in the ventricles of the heart, which seem to be composed of condensed pulmonary tissue, coated over with tuberculous matter, or, as it has occasionally appeared to me, coagulable lymph; these bands sometimes contain blood-vessels. Bayle makes the same remark, which is questioned, however, by Laennec, who states that he has "never even found a vessel of *any consequence* included within the substance of these bands;" but I have had several opportunities of demonstrating it to my class. Indeed, on one occasion a large blood-vessel in one of these bands gave way, and the child quickly died. This is the case noticed at page 175, and in which the blood found its way from the cavern by a fistulous opening into the œsophagus, as high up in the neck as to correspond to the inferior margin of the thyroid gland, and from thence passed into the stomach. It will be remarked that Laennec's expression is qualified, and I am ready to grant, that it is rare to find vessels of "*any consequence*" in these bands, because they must be compressed and diminished in size, in proportion to the condensation of the pulmonary tissue in which they are involved. Laennec supposes, that the tubercles, during their increase, separate the blood-vessels, and press them to one side, which would no doubt hold good, if there were only one mass; but it is not a satisfactory explanation of the situation of the blood-vessels, when the lungs are completely studded with tubercles. On one occasion, I found the blood-vessel passing through a cavern, in one of the bands already described, which had become obliterated by a plug of coagulable lymph.

The ramifications of the bronchi seem to be obliterated; they are frequently found to open into a cavern, but I have never seen a trace of them in the tuberculous matter. In proportion as the tubercle becomes softened and discharged, the walls of the excavation are found more or less thickly covered with something like a membrane, which can be scraped off with the knife. According to Laennec, this membrane presents in different parts of its surface projecting points. Sometimes there is an appearance of two membranes, but occasionally the walls of the cavity are formed by the natural tissue of the lung itself, condensed, red, and charged with tuberculous matter. Sometimes the walls of the caverns appear to be lined by a membrane of fibro-cartilaginous consistence, occasionally filling up a small cavern entirely, presenting an appearance of cicatrization; in this way, it is supposed that phthisis is sometimes cured.

The mucous membrane of the bronchial tubes, is generally red and thickened; that portion of it which lines the trachea and larynx, is occasionally red, thickened, and pulpy, with ulcerations here and there. Ulcerations are sometimes seen as far down the tubes as the third and fourth division. Occasionally the epiglottis and larynx are also covered with numerous ulcerations, sometimes having the appearance of chancres.

The stomach occasionally presents diseased appearances, its mucous membrane being sometimes red, thickened, and velvety, with dark streaks, as if seared with a red-hot iron. In other cases, a great portion of the mucous mem-

brane is found entirely removed, generally from the splenic extremity, leaving the naked vessels exposed, the rest of the membrane being thickened, soft, and reddish, with a great number of redder spots in the neighbourhood of the parts already destroyed, as if a pen full of red ink had been spattered over the surface. Sometimes large red vessels are seen arborescing in the mucous membrane, which displays appearances here and there, as if portions had been removed by passing the nails roughly over the surface of the stomach. In one case, all the coats of the stomach except the peritoneal, were destroyed over a space about the size of a shilling, but of an oval shape. In very few cases has it occurred to me to see tubercles in the mucous membrane of the stomach; they are frequently seen in that of the intestines, particularly in the caput cæcum, ascending colon, and termination of the ileum; they are sometimes situated in the mucous coat, and at others in the sub-mucous tissue. It is precisely in the situation above described that ulcerations are most frequently found, occasionally involving the whole of the colon down to the sigmoid flexure, which is much thickened in its texture, in some cases feeling contracted and hard like a small rope. The state of the mucous membrane has been so often described in this work, that I have only one additional observation to make, which is, that I have never seen the ulcerations undergoing the healing process in the disease now under consideration; nor the mucous surface in that dark, livid, fleshy, and thickened state, which it frequently shews in dysentery. The peritoneum is sometimes found inflamed, thickened, and covered with flakes of lymph, which may be traced to points of the intestines, at which the ulcerations have extended through the other tissues, till it attacked the peritoneum itself; occasionally, indeed, a small perforation is found, which has admitted the passage of feculent matter into the cavity of the abdomen. The peritoneum is frequently the seat of tubercles. They first appear perhaps in the miliary form, and afterwards become crude.

The mesentric glands are always found enlarged and altered in structure in phthisis, when the bowels are affected. The liver is sometimes found diseased, more frequently perhaps in women than in men; it is generally softened, enlarged and of a whitish or yellowish color, feeling greasy to the touch. This is the fatty liver; I have seen it so large, as to fill the iliac region, the right lobe extending down to the brim of the pelvis. The spleen is sometimes found tuberculated both in its substance and its capsule. The omentum is occasionally diseased in phthisical subjects. It is found thickened; fatty, like the liver, and tuberculated.

The brain is found in various states; sometimes there is effusion between the arachnoid in pia mater, or into the ventricles, the effect, in all probability, of impeded circulation. Tubercles are also observed in various situations in the brain, and in different stages, either solitary in some part of the cerebral substance, or spread generally over the arachnoid membrane, where I have seen them frequently in the miliary form, as well as in a crude state.

It has never been satisfactorily explained, why ulcerations should be found so

frequently in the mucous membrane of the bowels in pthhisis. It may perhaps be partly attributed to the obstructed state of the circulation, producing considerable vascular distension in its vessels, which at last become inflamed and ulcerated. There may be also something in the diseased condition of the blood itself, which cannot be perfectly de-carbonized. I have little doubt that the mucous surface of the bowels, in the ordinary state of the system, assists the lungs in depriving the blood of carbon. After they have been impeded, by the tubercular state of the pulmonary substance, perhaps the mucous surface of the bowels becomes more active, thereby causing inflammation and ulceration. There is no doubt that ulcerations in the intestine are sometimes owing to the irritation of tubercles in the part, but this speaks for itself. For further particulars relating to the morbid appearances found in this disease, the reader is referred to the work of M. Louis.

*Treatment.*—Although Laennec states that pthhisis is curable, still such a happy event is scarcely to be expected after the disease is formed, and it is very possible he may have been mistaken. The only case which I conceive to be capable of a spontaneous cure, is that in which a solitary tubercle has existed, without any other disease of structure in the lungs. Much may, however, be done in warding off the disease for many years, and retarding its progress after it is formed, by care and management of an individual,—by attending to his diet, which should be nourishing and moderate,—to his clothing, which should be warm and light,—and to his exercise, which should never be carried the length of producing fatigue. Constipation should be avoided, and such an individual should remove to a steady climate if he can afford it. After the disease is somewhat advanced, a great deal of expense and trouble may be spared, by keeping the patient at home, because at this period, change of climate will do no good; on the contrary, I have known it frequently to hasten the fatal termination, from fatigue and accidental exposure to cold during the journey.

Much may also be done to retard the advancement of the disease, to mitigate the patient's sufferings, and to smoothe his passage into the vale of death, by avoiding every cause which can hurry the circulation and respiration, and preventing exposure in bad or changeable weather. Phthysical patients suffer occasionally, very severely, from pains in the chest, produced by pleuritic inflammation, traces of which are almost always seen on dissection. Leeching and counter-irritation should therefore be occasionally employed. Profuse perspirations are to be discouraged, as is also the exhibition of acids, which are so often given to prevent them. The bowels are to be assiduously attended to, so as to prevent constipation, and the necessity of having recourse to strong purgatives, particularly when the disease is of long standing; when a laxative is necessary, it should be of the mildest description, and united perhaps with the extract of hyosciamus. Whenever a patient has more than the usual number of stools, particularly if they are watery, dark-couloured, and fetid, and when he begins to feel even slight uneasiness in the belly before going to stool,



a few leeches should be applied to the abdomen, followed or not, according to circumstances, by the application of tartar-emetic ointment to produce irritation. It is wonderful, in many cases, to observe the good effects which follow the application of leeches in subduing the inflammation of the mucous membrane, thereby controlling the diarrhoea, and preventing the formation of ulcerations. Indeed, I have seen the best effects follow the application of leeches, even after a large extent of the mucous surface was ulcerated; but counter-irritation, produced sometimes by a mustard plaster, sometimes by hot spirits of turpentine, or by the antimony ointment, will be often found of essential service, when the patient is too weak to bear bleeding. Peritonitis is sometimes occasioned by an extension of the ulceration to the peritoneum; therefore leeches and counter-irritation are sometimes advisable. An occasional opiate is also serviceable; and I have seen the best effects produced by the exhibition of one-twelfth of a grain of strichnine, when the bowel complaint was very troublesome.

The duration of phthisis is very various; few survive above a year; indeed the generality of patients sink in about nine or ten months, and I have often observed that women die quicker than men. One case terminated fatally in about twenty days, where there was no other perceptible organic lesion, except the granular tubercles which affected every part of both lungs. Louis says he has seen a case fatal in twenty-four days, but that the general period in *acute phthisis* is about fifty days.

It was formerly mentioned, that Bayle divided phthisis into as many species, as there have been diseased appearances found in the lungs. He has therefore treated of calculous concretions, under this title; together with the condition which has been called melanotic; and that which has been so well described by Laennec, under the term "medullary cancer." It appears to me that Bayle was so far right, because when the lungs are thus affected, the individuals frequently emaciate, cough, and breathe in the same manner as in the tubercular disease.

The following account of the more rare varieties of structural derangement found in the lungs, is compiled from Laennec's work:—

1st, *Bodies of a cartilaginous, bony, calculous, and chalky nature.*—Sometimes cartilaginous cysts are seen, containing bony or chalky concretions. Laennec states that the bony matter is not perfect, containing a greater quantity of calcareous phosphate, and much less gelatine than true bone, and hence these bodies resemble a piece of stone more than bone. In some cases, he says they contain no gelatine, and resemble moistened chalk. There are also found points of ossification in various parts of the lungs. I have never seen them provided with cysts, which Laennec states are very rare indeed; the non-encysted ossifications are those to which I now allude. They are sometimes very numerous; they feel rough and pointed, and are generally adherent to the pulmonary tissue, which is sometimes of a cartilaginous hardness. Lately I dissected a lung studded over with this kind of production; each was sur-



rounded by a melanotic mass, which, when situated on the surface of the lung, adhered to the pleura, in such a manner as to prevent a separation. Sometimes they are observed in the bronchial glands.

The chalky concretions are found in two states, one resembling soft chalk, the other like common mortar. In general, these are encysted. Sometimes calulous bodies, of the shape and size of small peas, are not only found on the surface of the lungs, but are also occasionally expectorated, which leads many to suspect that they are formed in the bronchial tubes; it is more probable they are formed in the substance of the lungs, and find their way into the air-passages by ulceration or absorption. When meeting with these large bodies on dissection, I have always seen considerable disease in the surrounding pulmonary tissue, sometimes in the state of recent inflammation, at others of grey or red hardening. I cannot sanction the opinion, that these concretions are the product of powdery substances taken into the lungs, suspended in the air we breathe; but bronchitis is often produced in this manner. Laennec supports the same opinion, and his reasoning appears to be quite conclusive, (p. 380.) He believes that these concretions are consequent to tuberculous affections that have been cured; but I see no reason for agreeing with him in this opinion.

*2d, Melanosis of the lungs.*—These productions, in their early or crude state, “possess a consistence equal to that of the lymphatic glands, and a homogeneous and somewhat humid composition; they are opaque, and in structure very much resemble the bronchial glands in the adult. When they begin to soften, a minute portion of fluid can be expressed from them, of a thin reddish character, intermixed with small blackish portions of a substance which is sometimes firm, sometimes friable, but which, even when friable, conveys to the touch an impression of flaccidity; in a more advanced stage, these portions first, and subsequently the whole mass in which they are contained, become quite friable, and are soon converted into a black paste. Melanotic matter is found in four different forms, encysted, non-encysted, generally infiltrated into the natural texture, and deposited on the surface of organs.” (Page 383.)

*Encysted melanosis.*—“The cysts enclosing this species are very regularly rounded, and vary in size from that of a small hazle-nut to that of a walnut. They have a very regular and equal thickness, which is never greater than half a line. Cellular substance appears to be the only tissue that enters into their composition. They adhere by means of a very fine cellular membrane to the substance of the organ in which they are situated, and from which they can be readily separated by dissection. Their interior surface is rather smooth, but adheres to the morbid matter which it surrounds. The medium of this adhesion appears to be a very fine imperfect cellular tissue, though it cannot always be distinguished. I have hitherto (says he) only found this variety of melanosis in the liver and lungs; and in the latter organ I have only as yet met with a single mass of it.” (Page 383.)

*Unencysted melanosis.*—“This variety is much less rare than the preceding. I have met with it (he says) in the lungs, the liver, the pituitary gland, and the

nerves; but it has been since found in almost every organ. The volume of masses of this kind is quite indeterminate, varying from that of a millet seed to that of an egg, or more. They are also quite irregular in figure. They commonly adhere very closely to the parts in which they are situated; sometimes, however, they are united to these by a very fine, though sufficiently visible, cellular tissue, which permits their removal without any laceration. In this last case they are commonly of a rounded shape." (Page 384.)

*Melanotic matter generally infiltrated into the natural texture.*—"It frequently happens that this morbid matter, in place of being segregated in distinct masses, is disseminated throughout the organs in which it is found, and deposited between the particles or molecules of the natural tissue. The appearance and colour of parts affected in this manner, present a good many varieties, according to the texture of the organ, the quantity of matter deposited, and the particular condition of this matter. When the infiltration is recent, and in moderate quantity, the appearance of the affected part merely differs from the natural condition, in being intermixed with small black dots or striæ, the intermediate portions being quite of a healthy character. As the disease increases, the dots and striæ enlarge in number and volume, until the whole of the natural tissue of the part is lost in the morbid degeneration. It is usually only at this period of its progress that the melanosed matter begins to soften; but if the softening takes place before the complete removal of the natural tissue of the part, it frequently happens that this softens also, and intermingles with the morbid matter, the colour of which is thereby changed to brownish, yellowish, or greyish." (Page 384.)

There are various preparations in my museum, which illustrate these very excellent descriptions of M. Laennec. There is one, shewing the last variety of this affection, which was found in the stomach of a dram-drinker. I have also the portion of a lung, the whole of which was affected with the disease, and which looks like a sponge filled with very black ink. There is also a rare specimen of melanosis affecting the pleura pulmonalis.

A case, rapidly fatal, occurred to me in 1825. The subject was a middle-aged man, who began to complain on the 15th July, but did not take medical advice till the 19th, when he was found to complain of severe pain and weight in his head, some ringing in his ears, but no intolerance of light; the pain was increased by motion and coughing; his breathing somewhat accelerated, respiration 24 in a minute; but he had neither pain, cough, nor expectoration; complained of uneasiness in the abdomen, which was not increased on pressure; tongue whitish in the centre, and at the edges red; skin hot and dry; pulse 90, full and strong. Twenty ounces of blood were taken without any decided relief, and in five hours afterwards, twelve ounces more, which removed the headache. On the 20th, he was so much better as to be able to leave his bed, but became worse again towards evening. 21st, Again somewhat improved. By the stethoscope, the respiration was noisy and blowy, which led to a suspicion of the existence of crude tubercles, surrounded by healthy structure; respiration

30; pulse 112; tongue not improved; face somewhat flushed; skin hot and dry. He died next morning in what his friends called "a fit," which appeared to be asphyxia.

The lungs were found completely infiltrated with melanotic matter, but still crepitating; and they floated when placed in water; the spleen was affected in the same manner.

*3d, medullary sarcoma.*—According to Laennec, "medullary sarcoma may exist under three different forms, viz., *1st*, encysted; *2d*, in irregular masses without a cyst; and *3d*, diffused in the tissue of an organ. In whichever of these forms it exists, it presents, in its progress, three different and distinct stages, viz., *1st*, the incipient or crude state; *2d*, its perfect state, in which it exhibits the resemblance to brain, which forms its special characteristic; and *3d*, its soft or dissolved state.

"I shall first describe it as it is observed in the second or perfect state, as this is the condition in which the three varieties most nearly resemble each other, there being much difference between them in the first and last stages. In its perfect state it is homogeneous, of a milky whiteness, and very like the substance of the brain. In different parts it has commonly a slight rose tint. It is opaque when examined in mass, but in thin slices it is in a slight degree semi-transparent. Its consistence is like that of the human brain; but it is commonly less coherent, being more easily broken and comminuted by the finger. According to its degrees of density, it resembles one part of the brain more than another; but it is more commonly like the medullary substance of a brain that is more than ordinarily soft, (or like that of a child's,) than the healthy brain. When existing in any considerable extent, this species of cancer is, in general, supplied by a great many blood-vessels, the trunks of which ramify on the exterior of the tumours, or between their lobes only, while the minuter branches penetrate their substance. The coats of these vessels are very fine, and readily ruptured; and this accident gives rise to clots of extravasated blood in the interior of the tumours, sometimes of considerable size, which bear occasionally a striking resemblance to those found in the brain of subjects dead of apoplexy. Extravasations of this kind may sometimes be so considerable as to supplant almost the whole of the brain-like matter, so that the true nature of the tumour can only be ascertained by some small points, still remaining, of the original growth. This change occurring in superficial tumours of this kind, and being productive of much hæmorrhage, appears to me to have given rise to the name of *fungus hæmatodes*, applied to certain cancers by modern surgeons. Under this name, however, I am also convinced that they have confounded tumours of different kinds, especially those commonly called *varicose*, which are composed of an accidental tissue, very analogous to that of the *corpus cavernosum penis*. I have never observed any lymphatics in tumours of this sort, but it is probable that the circulating system is complete in them, as I have seen their substance deeply tinged with yellow in cases of icterus. The matter of encephaloid does not continue long in the state just described; it tends incessantly towards a



softer condition, and, in a short space, its consistence scarcely equals that of a thickish paste. Then begins the last stage; the process of softening becomes more rapid, until the morbid matter becomes as liquid as thick pus, still, however, retaining its whitish or rosy white tint. Sometimes at this period, or a little earlier, the blood extravasated from the vessels contained in the tumour, becomes intermixed with the morbid matter, so as to give it a dark red colour, and the resemblance of clots of pure blood. In a short time the extravasated blood is decomposed; the fibrin concretes, and, together with the colouring matter, unites with the brain-like matter of the tumour; and the serum is absorbed. In this condition the morbid growth retains no resemblance to brain; it is of a reddish or blackish colour, and of a consistence like that of paste, somewhat dry and friable. Sometimes the change of structure and appearance is so complete, that one would be led to consider the tumours as of a different kind, but for the existence in them of portions of the original matter still unchanged. In some cases, contemporaneously with tumours that have been changed in this manner, there will be found others retaining the original cerebral character; so that, in all cases, we are able, with a little practice, to discover the true nature of the tumour in all its stages." (Forbes' Translation, p. 393.)

"Such are the characters which this species of cancer presents in its two latter stages, and equally in all the three varieties. I shall now describe the characters of each of these varieties in the first or crude state.

"1. *Encysted medullary sarcoma*.—The size of this species is very various. I have seen the tumours as small as a hazle nut, and larger than a middle-sized apple. I have found them as large as this in the lungs. The cysts are of pretty equable thickness; and this is never more than half a line. They are of a greyish-white, silvery, or milky colour, and have a semi-transparency, more or less, according to their thickness. Their texture is altogether cartilaginous, and rarely fibrous; but it is much softer, and less easily broken by bending than cartilage; on this account they must be ranged among the *imperfect cartilages*. The medullary matter contained in these cysts, can be easily detached from their inner coat. It is commonly divided into several lobes, by a very fine cellular tissue, which may be compared with the pia mater, and the more so from the great number of blood-vessels which traverse it. The fineness and brittleness of these have been already noticed, and also their penetration of the cerebriform matter itself, to which they give a rose tint here and there. It is their rupture that gives rise to the clots of blood formerly mentioned. Sometimes, also, the trunks of these vessels are ruptured in the interstices of the lobules; and the blood being injected beneath the fine cellular substance which accompanies them, gives this the appearance of a distinct membrane. It is commonly in their early or crude stage that these tumours are divided into distinct lobes. These are especially observable on their surfaces, and have sometimes considerable resemblance to the convolutions of the brain. The cyst does not at all enter between these convolutions, nor does it even indicate on its surface their place or configuration. In this stage the



medullary matter is pretty firm, often firmer than the fat of bacon. It is of a dull white, pearl grey, or even yellowish colour, and in thin slices, has a slight degree of semi-transparency. When cut into, it appears subdivided interiorly into lobules, much smaller than those seen on its surface. These lobules are in such close contact as to leave no interval whatever; and their separation is merely indicated by the reddish lines traced by the vascular cellular tissue, by which the separation is affected. These lines rarely cross each other, but exhibit many irregular curves and convolutions. When these tumours pass into the second stage, their texture becomes more homogeneous, and all distinction of the small interior lobules is quite lost; the distinction, however, of the larger exterior lobes still continues. The blood-vessels which run between these lobes, and in the cellular tissue immediately investing the tumour, are much more developed than in the early stages of the disease, and it is only at this second stage, or as it approaches the third, that the extravasations of blood takes place. The third stage begins, as I have already mentioned, when the medullary matter has acquired a consistence like pap or paste, or like that of a brain softened by commencing putrefaction. In this state, it has still much resemblance to cerebral substance. I have never found that the morbid growth ever softens still more, or that it is absorbed or evacuated, so as to leave an empty cyst, or cavity like tubercles; consequently it is not probable that we shall ever find pectoriloquism as a sign of this affection. Hitherto I have only found these encysted medullary tumours in the lungs, liver, and cellular substance of the mediastinum." (Page 395.)

"2. *Unencysted medullary sarcoma*.—Medullary tumours of this species are very frequently met with. Their size is very variable. I have seen them from the size of the head of a full grown fœtus to that of a hemp seed. Their shape is commonly spheroid, but occasionally flattened, ovoid, or altogether irregular. Their external surface is lobulated, but the divisions are less regular than in the encysted species; their internal structure, in the two last stages is precisely the same. The cellular membrane which invests them, is more or less marked, according as they are placed in a loose cellular tissue, or in the substance of a viscus of firm texture; in the latter case, their investing membrane is thinner and less distinct. In their first or crude stage, their semi-transparency is greater than afterwards; they are almost colourless, or have a very slight blueish tint in ocellated patches; they are pretty hard, and divided into numerous lobes. Their substance is then fatty, like lard; but when incised, it does not at all grease the scalpel, and it coagulates by heat, without shewing a particle of fat. The transition from the first to the second stage takes place in the following manner:—The substance of the tumour becomes more opaque, softer, whiter, and its inner distinction into lobules, for the most part, disappears. The original texture is observed longest in the neighborhood of the external interlobular fissures. In this situation, I have found portions still in a state of induration, after the mass of the tumours had passed into the third stage. I am led to conclude that the encysted tumour follows precisely the same progress as that

just described. The non-encysted medullary tumours may exist in any part of the body ; but they are most frequently met with in the loose and abundant cellular tissue of the limbs, and in the larger internal cavities. I have met with them in the cellular membrane of the fore-arm, thigh, neck, and mediastinum ; they are still more frequently found in the cellular substance around the kidneys, and the anterior part of the spine, and in these situations they often have a very large size. Although they are frequently found in the viscera, they are, however, much rarer there than in the cellular substance." (Page 397.)

In my collection there are several fine specimens of these varieties of medullary sarcoma, and others unnoticed by any author, but which it would be tedious to describe.

## CHAP. VI.

### ASTHMA.

---

THIS term was formerly used to express every species of difficulty of breathing, but latterly it has been employed to signify a specific intermittent dyspnœa, independently of organic lesion; but I shall shew how erroneous are such views of this disease, when I come to treat of its pathology.

This disease is observed, most frequently, in people beyond the middle age, rarely in youth; it affects men oftener than women, and those of full habit of body more frequently than the spare; and it would seem to be occasionally hereditary.

*Phenomena.*—Attacks of asthma sometimes appear towards the afternoon, or at the moment the patient is going to bed, but more frequently they occur during the night; occasionally, indeed, the patient is seized during a sound sleep, and awakes with a sense of suffocation. In describing the disease, I shall confine myself to a few of the leading symptoms, because, depending upon so many morbid conditions of the lungs, heart, and perhaps the brain, the symptoms which may take place, have too wide a range of character to be taken into a short general sketch. Upon the approach of the paroxysm, the patient usually feels a sense of coldness over the surface of the body, indeed sometimes severe rigors take place; instantly a constricted feel is experienced in the chest, and difficulty of breathing, both of which are increased in the recumbent posture. He sits up, because he can then breathe more easily; he demands more air to be admitted into the apartment; he employs all his efforts to dilate the chest, and then to empty the lungs. There is restlessness; occasional cough, which the patient makes efforts to perform, thinking to force something out of the lungs which impedes his breathing. *Expiration* is performed with a peculiar whistling sound, and sometimes it is sonorous. The face is either pale or livid. The eyes have an anxious expression. The extremities are frequently cold, even the nose and the ears; and the face and breast are covered with a cold dew. The pulse is in various states,—full and quick,—small and quick,—sometimes oppressed;—and it occasionally intermits. The skin is frequently discoloured; and there is often a troublesome flatulency and sense of fulness in the abdomen. These symptoms continue with more or less violence for some hours, or days, till expectoration takes place, which generally precedes a remission. The expectoration is sometimes scanty, at others copious. This is a short description of

the symptoms as they generally occur. In slight cases, however, a sense of constriction in the chest only is complained of, which is sometimes relieved by the expectoration of a whitish mucous; but in more severe instances, the symptoms are much more violent and alarming, not only to the patient, but to the by-standers; instant suffocation being threatened, and he solicits relief in the most pitiful manner.

An individual may have an attack for three or four successive nights, and not be again affected for months; sometimes it returns every month, for a number of years, and then disappears for a considerable time; women are generally attacked immediately preceding the catamenia. The duration of each paroxysm is very various, from two or three days to three or four hours. One attack leads to another, and the paroxysms generally become more and more frequent and severe.

In describing this disease, authors have mentioned two varieties,—the humid and the dry. The first commences more gradually, and becomes slowly worse; the cough is frequently severe, attended with early and copious expectoration, which produces relief; and the mucous râle is heard almost from the beginning. The dry asthma commences suddenly, and becomes quickly severe, but does not continue long. The cough is slight; the expectoration very scanty, and observed at the close of the paroxysm only; the mucous râle is not heard till towards the conclusion of the attack,—even then it is very slight, and perhaps partial.

*Causes.*—Asthma is liable to return occasionally during the whole period of a man's life. The subsequent attacks depend on different circumstances in different constitutions. Some are affected by external heat, others by external cold; many by overloading the stomach; and almost all asthmatics are affected by hurried exercise, and by any other cause which increases the rapidity of the circulation. It will generally be observed, that those who are predisposed to it, dread cold, moist weather, and stormy seasons. Individuals who follow particular occupations, would seem to be more subject to this affection than others, particularly those who are exposed to irritating vapours, and breathing an atmosphere in which different substances, in very fine powder, are suspended. Causes particularly affecting the nervous system, would also seem to be capable of producing paroxysms, such as passions of the mind, &c.

*Pathology.*—It is generally admitted, that that kind of dyspnœa which is now under consideration, and which is commonly known by the name of asthma, is produced by various diseased states of the lungs and heart. Chronic bronchitis, emphysema, and congestion, are the three conditions of the lungs which most frequently produce asthma; and I believe it is likewise occasioned by some kind of nervous irritation, the nature of which is yet unknown. It is, perhaps, from this view, that the doctrine of a spasmodic structure in the air-tubes has arisen.

Having already treated of chronic bronchitis, it is unnecessary to say more upon the subject in this place; I shall therefore proceed to describe emphy-



sema of the lungs, of which there are, according to Laennec, two kinds; 1st, That which consists in the simple dilatation of the air-cells, which he calls pulmonary or vesicular emphysema; and, 2d, That which is characterized by infiltration of air between the lobules of the lungs, which he terms interlobular emphysema.

In the first, the size of the vesicles is much increased, and also less uniform; the greater number equal or exceed the size of a millet-seed, while some attain the magnitude of cherry-stones, or even French beans. The largest are, in all probability, produced by the union of several of the air-cells, in consequence of the rupture of the intermediate partitions; sometimes, however, they appear to arise from the simple enlargement of a single vesicle. The bronchial tubes, especially the small ramifications, are sometimes very evidently dilated in those portions of the lung where the emphysema exists.

The interlobular emphysema, according to the same author, is characterized by infiltration of air between the lobules of the lung, and must be considered as necessarily depending on a rupture of some of the air-cells in the first place, and the consequent extravasation of the air contained in them. When the extravasation exists near the root of the lungs, it sometimes extends to the mediastinum, thence crosses to the neck, and occasionally spreads over the whole sub-cutaneous and intermuscular-cellular substance of the body.

The pathognomonic signs of the pulmonary emphysema, says Laennec, "are furnished by a comparison of the indications derived from percussion and mediate auscultation. The respiratory sound is inaudible over the greater part of the chest, and is very feeble in the points where it is audible; at the same time, a very clear sound is produced by percussion. From time to time, also, we perceive, while exploring the respiration or cough, a slight sibilous rattle, or sound of the valve, as in the dry catarrh, occasioned by the displacement of the pearly sputa." When existing in a high degree, it may be recognized by a sign which is altogether pathognomonic, which Laennec calls, the crepitous rattle with large bubbles. "In this case, the sound during inspiration or coughing, is like that which would be produced by blowing into half-dried cellular substance." (Page 158.)

In the inter-lobular emphysema, Laennec assures us "there is one sign completely pathognomonic, viz. the dry crepitous rattle with large bubbles, when very distinct and continuous, or nearly so. Together with this sign, (continues he,) we usually perceive, during inspiration and expiration, a sound or sensation as of one or more bodies rising and falling, and rubbing against the ribs." (Page 171.)

Emphysema of the lungs is a common disease in horses, and is the great cause of what is called *broken-wind*; and is more common in man than is generally imagined. It is produced by various causes, as lifting a heavy weight; it occurs during the act of bearing down in labour; but more frequently it is a consequence of violent coughing in cases of bronchitic inflammation; in-

deed, I scarcely ever witness a dissection of a person who died of bronchitis or hooping-cough, without seeing pulmonary emphysema.

For a more particular account of these morbid states, the reader is referred to the work of Laennec.

There cannot be a doubt but that the nervous system has a powerful influence on the functions of the lungs, when labouring under disease, as well as in health; and I imagine no one can deny that asthma may be produced either in consequence of some diseased action of the brain, or in the nerves themselves which supply the lungs. It has been attempted to be shewn, by Reisseissen and Laennec, that the bronchial tubes possess a muscular structure, through the agency of which the air-vessels contract, when under the influence of spasm; but this is not a new idea on the part of Reisseissen or Laennec, for Cullen makes the following statement:—"From the whole of the history of asthma now delivered, I think it will readily appear, that the proximate cause of this disease is preter-natural, and in some measure, a spasmodic constriction of the muscular fibres of the bronchiæ, which not only prevents the dilatation of the bronchiæ necessary to a free and full inspiration, but gives also a rigidity which prevents a full and free expiration." (Par. 1384.) But neither is this an original idea of Cullen's, for it was entertained long before his time by Hoffman and Willis. It is foreign to the object of this work, to enter into anatomical controversy, and unnecessary in this instance, for even Laennec states that he had "met with only a very small number of asthmatics, in whom there was evidence of pulmonary spasm, without any attendant catarrhal affection; but some few I have met with. On the other hand, I have known a great number of patients, in whom the catarrh, whether dry, pituitous, or mucous, was too slight in degree, or too small in extent, to be considered as the real cause of this asthma." (Page 412.) Because, perhaps, there might be in these cases some organic lesion of the heart and large vessels, or the co-existence of cerebral irritation. These observations lead me to remark, that there is almost always something more in this disease than the original organic lesion in the lungs themselves; this experience has frequently led me to trace to sudden congestion of the lungs, which flattens the air-vessels, and prevents them from dilating.

Various diseases of the heart produce asthma; the most frequent are dilatations of its cavities, diseases of its valves; and aneurism of the aorta, of which more hereafter.

*Treatment.*—From want of attention to the pathological condition of the body, the treatment of asthma has hitherto been uncertain and empirical. Some highly extol one remedy, and some another; some always use the lancet, and others invariably condemn it. Although an advocate for occasional bleeding in asthma, yet I am convinced, that no remedy, except the indiscriminate use of opium, has done more mischief. There are only two circumstances in which bleeding should be had recourse to; 1st, where we have evidence of acute action in any of the tissues of the lungs, superadded to any of the or-

ganic lesions already mentioned ; 2dly, when there is much venous engorgement of the lungs. In old chronic cases, it must be a doubtful, and occasionally a dangerous remedy. Dr. Bree assures us, that he repeatedly tried bleeding, but does not think the paroxysm was ever shortened an hour by the remedy ; and in old people he found it injurious. It may be mentioned, that Dr. Bree was himself an asthmatic, and after paying much practical attention to the disease, he wrote a Treatise upon the subject, which is worthy of perusal. Bleeding must be employed early in the paroxysm, or not at all, unless the patient is threatened with suffocation. The pediluvium is to be instantly had recourse to, which I have seen sometimes of itself arrest a paroxysm ; as well as inhaling the vapour of hot water. The apartment is to be freely ventilated, and too many people are not to remain in the room. Laxatives are always necessary. Vomiting is a favorite remedy with many, and is useful principally in two cases,—when there is evidence of a load of food being in the stomach, —and when we know that the disease depends upon chronic bronchitis. In the last case, vomiting will assist in clearing the air-passages of superabundant mucous. In almost all cases, counter-irritation is useful, whether produced by mustard plasters, stimulating embrocations, or blisters. Strong coffee was formerly recommended by Sir John Floyer, from the relief he experienced in his own person, and it has since been as highly lauded by his fellow-sufferer, Dr. Bree. With respect to opium, very opposite opinions have been maintained. Laennec speaks strongly in favour of the whole class of narcotics, with a view of producing sleep, upon the theory of bringing patients so affected, as nearly as possible to the level of *bats*, and other animals which hibernate, and consume nearly a hundred times less air when in a state of torpidity. He seems to have been influenced by an idea of producing relaxation of the muscular fibres of the air-tubes, thereby overcoming the spasm of the lungs. The following narcotics are recommended by Laennec,—opium, belladonna, stramonium, phellandrium aquaticum, aconitum napellus, colchicum, tobacco, smoked or taken internally, cicuta, dulcamara, hyosciamus. With respect to tobacco, it may be mentioned, upon the authority of Dr. Ferrier, that Baglivi used the “*julapum tabaci*” in cases of asthma. (Reflections, p. 204.)

If the disease generally depended on spasm, opium would be useful in a great number of cases, but I am convinced, from what I have seen in practice, that it is the most dangerous of all the remedies which have hitherto been recommended. Dr. Bree tells us, that four grains nearly sent him into the next world. In truth, it is a remedy which must very often interfere with the efforts of the constitution, for relieving the patient ; more particularly in the form of the disease produced by chronic bronchitis, when opium, by allaying the cough, promotes a collection of mucous in the air-passages : hence the common observation, that opiates dry up the expectoration. I have seen some individuals very much relieved by smoking tobacco, and some by smoking stramonium.

As the disease is frequently observed to terminate by expectoration, the class of medicines called expectorants has been much employed. In fact, if routine



practitioners are asked what should be done for a patient in a fit of asthma, they will be found either to order bleeding, or to give an expectorant. I have seen them often tried, but very seldom with any good effect. Of this class, squills is much in use, together with the fœtid gums.

After the paroxysm is over, tonics are frequently recommended. Dr. Bree speaks much in praise of a remedy composed of nitric acid, hyosciamus, and squills. Some tell us to avoid warm bathing, and to use the cold bath as a tonic during the intervals; the cold bath agrees with some better than the warm, and I have seen both do much mischief.

Issues, setons, and cauteries, have all been used as counter-irritants, and it is worthy of remark, that many fits of asthma have taken place immediately after the disappearance of a cutaneous eruption. I have myself witnessed examples of this kind, and I have been acquainted with asthmatics who were occasionally affected with cutaneous eruptions, and who, although they complained of much distress from the itching and tingling of the skin, were yet contented with their lot, and invariably expressed themselves as being certain of an attack of asthma if they were repelled. The observation of such circumstances, has led me to insist much on the propriety of employing counter-irritation in all diseases of the chest, but particularly those of a chronic nature.

The sub-carbonate of iron has been recommended, but I cannot speak from experience of its effects.

Galvanism is another remedy which has been much lauded, not only in this country, but on the continent. Dr. Wilson Philip, to whose exertions in endeavouring to improve the science of medicine, the profession stands deeply indebted, directed his attention to this subject. He made many experiments on animals, in conducting an inquiry into the laws of the vital functions; and among others, he divided the pneumogastric nerves, in order to diminish the nervous influence in the lungs and stomach; the digestive powers were found to be thereby much impaired or suspended, and dyspnœa was produced. He then directed galvanic influence towards the lungs and stomach, and he observed that the animal could be made to breathe easily, and digest its food. After these experiments had been repeated and confirmed, Dr. Wilson Philip was naturally led to inquire what diseases depended on a failure of the nervous influence. Judging from analogy and observation, he thought it probable that indigestion and asthma were two, at least, of the number. This is a short view of the circumstances which led Dr. Wilson Philip to expect relief from galvanism in *habitual asthma*; which name he has given to that form of the disease, in which the breathing is constantly oppressed,—better and worse at different times, but never free,—and often continues to get worse in spite of every means we can employ. He states, that he has used galvanism in many cases, and almost uniformly with relief, applying as much of the galvanic influence as patients could easily bear. The period varied from five to fifteen minutes, before relief was experienced; and he generally found, that the stronger the sensation excited, the more speedy the relief; he found from eight to fifteen four-inch plates of



zinc and copper sufficient; the fluid used, was one part of muriatic acid to one hundred and twenty of water. Some people required more than sixteen plates, and a few could not bear eight. It is a curious fact, that on the first application of galvanism, a person may experience little sensation from the operation of twenty-five or thirty plates, yet afterwards he may not be able to bear more than six or eight. He applied it in the following manner;—he placed two thin plates of metal dipped in water, one on the nape of the neck, the other on the lower part of the epigastric region. The wires from the different ends of the trough were brought in contact with the plates; in this way, the galvanic influence was sent through the lungs, as much as possible in the direction of the nerves. The operation was discontinued as soon as the patient said his breathing was easy, any further application being found quite unnecessary. We are assured, that this means afforded relief to those who had laboured under oppressed breathing for ten or twenty years, as readily as in more recent cases; therefore, we must join Dr. Wilson Philip in taking this as a proof, that no organic lesion existed in the lungs. For further information on this interesting topic, the reader is referred to his work, entitled “Inquiry into the Laws of the Vital Functions.”

Whatever differences of opinion exist respecting the nature and seat of asthma, and the treatment proper to be pursued during a paroxysm, all agree in recommending, that the diet of an asthmatic should be light, nourishing, and easy of digestion; that his clothing should be warm; and that he should avoid exposure in cold damp weather, particularly when the wind is in the east. The bowels should be kept easy, but it is proper to mention, that I have known a paroxysm brought on by hypercathasis as well as constipation.

## PART IV.

---

DISEASES OF THE CIRCULATING SYSTEM.



## CHAP. I.

### GENERAL REMARKS ON DISEASES OF THE CIRCULATING SYSTEM.

---

DISEASES of the heart, from their frequency, and the extreme severity of their symptoms, constitute a very important branch of practical medicine. Till the conclusion of the last century, the generality of the profession were very imperfectly acquainted with them, and even now, when so much has been done by the labours of Corvisart, Laennec, Bertin, and others, very erroneous notions prevail both with regard to their diagnosis and treatment. On this subject, our common systematic works are particularly deficient, and with the exception of the imperfect treatise of the late Mr. Burns, no original work exists in English, on this interesting and important class of diseases; but it behoves me to mention, that the "original cases" of Dr. Forbes are particularly deserving of attentive perusal; and many valuable papers and cases are scattered through our periodical works, and the transactions of the different societies.

The utilities of the discovery of mediate auscultation by Laennec, in diseases of the lungs, have been already as fully discussed as the plan of this work will allow. Great advantage may also be derived from the employment of the stethoscope in diseases of the heart. Percussion affords us some assistance, but much less than in many of the affections of the lungs. Some physicians inform us, that the stethoscope is entirely useless in affections of the heart, because, according to their account, we cannot distinguish between organic disease, and nervous palpitation, which we confess we cannot do in all cases by the stethoscope alone. These gentlemen seem to forget, however, the impossibility of forming an accurate diagnosis by the common signs or symptoms; and I may observe, that they might as well be required to give up the exercise of their profession altogether, as reject the important assistance which we derive by immediate auscultation, because it does not in all cases afford an absolute certainty.

A common prejudice prevails, that as diseases of the heart are in their nature irremediable, therefore an accurate diagnosis would only lead to despondency and inertness of practice. Stethoscopists deny both the premises and



the conclusion, and we insist, that the more accurately we are acquainted with the nature and seat of a disease, the more appropriate will be our practice ; I can state from experience, that much may be done by judicious treatment, not only in alleviating, but in some cases in curing, diseases of the heart. We have seen patients labouring under disease of the heart, pronounced to be far advanced in consumption ; and others, with disease of the valves, treated for indigestion and gastric irritation ; and we have seen patients labouring under enormous dilatation of the heart, in its last stage, who were laughed at, and treated for nervous or dyspeptic complaints, and recommended to avoid vegetables, and eat beef-steaks ; who were urged to use exercise, when the very effort brought on severe dyspnœa, and a sense of suffocation. I shall content myself at present, by stating one additional circumstance,—that it is of the greatest consequence to be able to distinguish simple hypertrophy from dilatation of the heart, because I feel convinced the former is as capable of being cured, as almost any other disease to which the animal frame is liable ; so that, if there were no other circumstances to uphold us, in making use of the stethoscope, as an additional means of diagnosis in diseases of the heart, this alone should induce every professional man of common feeling, and honesty, earnestly to set about acquiring the power of employing the instrument. I blush to confess, that I was formerly one of those who ridiculed mediate auscultation, merely because, on applying the stethoscope once or twice, I could hear nothing ; but after putting myself under the direction of Dr. Scott, I was able, in the course of a very short time, to discriminate between the sound produced by respiration in a healthy state of the lungs, and that in disease.

The contractions of the heart give rise to very distinct sounds, which enable us to study with ultimate success the actions of that organ, and to detect any irregularity or deviation from its natural condition. Before describing the organic changes which the heart undergoes, it is necessary to give a very brief analysis of its natural action as heard and felt with the stethoscope. If we apply this instrument to the region of the heart, and place a finger on the radial artery, a moment previously to the arterial pulse the ear is sensible of a slight impulse, accompanied by a somewhat dull, but very distinct sound. Immediately, and without any interval, a clear sound is perceived, resembling that of a valve, or whip, or the lapping of a dog. After this, there is a short, but well-marked period of repose.

In a healthy person, with a well-proportioned heart, and carrying a moderate quantity of flesh, the shock or impulse of the heart, can be felt over, or very near the cardiac region only. In persons who are thin, and the thorax narrow, the impulse is more extended, and may be felt over the whole of the sternum, and occasionally over the left side of the thorax.

The sound can generally be heard over the left side, anteriorly, and under the clavicles, but more faintly as we recede progressively from the cardiac region. When more extended, it is heard successively in the following places ;—

1. Left side anteriorly,—2. Right side anteriorly,—3. Left side posteriorly,—
4. Right side posteriorly.

The intensity of sound is progressively less in the order above-mentioned, but it must be recollected, that a condensed, or strongly compressed lung, transmits the sound better than a healthy one ; and when there is much wheezing, the sound of the heart is obscured. Therefore, in estimating the heart's action, we must always take into account the state of the lungs.

When the heart can be heard in all the points stated, we may suspect that it is larger than natural, and that it is dilated ; for it may be stated generally, that a great extent of sound is a mark of thin parieties ; and that a strong impulse, with a confined range of sound, coincides with hypertrophy, or increased thickness in the walls of the heart.

By the shock or impulse, we mean the sensation of percussion which is communicated to the ear on applying it immediately to the chest, over the region of the heart, or through the medium of the cylinder of wood. The degree of impulse is inversely as the extent of the sound, and directly as the thickness of the walls of the heart ; when these walls are very thick, the shock is often so great as to elevate the ear of the observer, and may be often perceived even through the garments.

When the walls are *very* thin, no impulse is communicated, even when the sound is very loud. A strong impulse, then, is to be considered as a characteristic of simple hypertrophy ;—the absence of impulse, with increase of sound, as an indication of simple dilatation ;—sound and impulse conjoined, point out the combination of hypertrophy with dilatation.

It is necessary to mention, that the sound and impulse of the left ventricle is perceived on the left side of the chest, in the space between the cartilages of the fourth and seventh ribs ;—that of the right ventricle, over the lower part of the sternum.

It has been stated, that the action of the heart is accompanied by two distinct sounds, and one impulse ; that the first sound is dull and prolonged, and that the second, which immediately succeeds the other, is sharp and clear ; after which there is an evident interval. Accompanying the first sound, there is a shock or impulse felt by placing the hand over the region of the heart, which is not synchronous with the pulse at the wrist. Much diversity of opinion exists, and considerable discussion has lately taken place, as to the cause of the sounds and impulse, as well as respecting the rhythm or order of contraction of the different cavities of the heart ; and it appears probable, that the opinions of Laennec upon these physiological points are erroneous, and must be abandoned. Laennec supposed that the first sound is produced by the contraction of the ventricles, the second by that of the auricles ; but Mr. Turner has shewn, in a paper published in the 3d. vol. of the Ed. Med. Chirur. Transactions, that the contraction of the auricles always precedes that of the ventricles : thus reversing the almost universally received opinion of the order of the contraction of the different cavities of the heart. Mr. Turner states, that the contraction of the

auricles is so immediately succeeded by that of the ventricles, that he found it very difficult, if not impossible, to distinguish any interval between them. He thinks, therefore, that the first sound is occasioned by the almost simultaneous contraction of both sets of cavities; and in this opinion Mr. Spittal is disposed to agree.

It is proper to mention in this place, that the sounds produced by the heart's action, are not dependent on the contraction or relaxation of the muscular fibres of that organ, but are occasioned by the motion of the blood on the uneven surface of the cavities of the heart; the intensity of the sound being increased by the rapidity of the motion, the roughness of the surface over which the blood passes, and the thinness of the muscular structure of the heart. On this point Dr. William Stokes, of Dublin, and Mr. Spittal, are agreed. After a careful review of all the writings on this subject, and frequent examinations of the action of the heart by auscultation, I believe Dr. W. Stokes' view to be correct, that the first sound and its accompanying impulse, are produced by the motion of the blood propelled into the ventricles by the contraction of the auricles.

*Cause of the second sound.*—Mr. Turner supposes the second sound to depend on the flapping of the pericardium on the heart. Dr. Williams considers it to be the effect of the flapping of the mitral and tricuspid valves against the walls of the heart. Mr. Spittal is rather inclined to attribute it to the rushing of blood into the ventricles, during their elastic dilatation. Mr. Spittal has erred, after ably and successfully refuting the theories of M. Laennec, Mr. Turner, and Drs. Barry and Williams. That he should not have formed a correct opinion as to the second of the consecutive sounds, is not to be wondered at, when we consider that he was misled with respect to the first. But it is with pleasure I seize this opportunity to express the high sense I entertain of Mr. Spittal's talents and zeal in the cause of medical science, and his superior acuteness in auscultation, of which I have several times availed myself in practice. Dr. W. Stokes performed some vivisections in August, 1829, to ascertain whether there is a want of synchronism between the impulse of the heart and pulse at the wrist, at the suggestion of Dr. M'Donnell, of Belfast, who had many reasons for doubting the correctness of Laennec's statements concerning the heart, wherein he describes the impulse felt at the side as the effect of the contraction of the ventricles. These experiments were performed in company with Mr. Hart, and in the presence of many pupils; the results were immediately made public by both these gentlemen, in their lectures and in private conversation. They were well known in Dublin many months before the appearance of any other researches on the subject. In the course of these experiments, Dr. Stokes became convinced that the cause of the second sound is the motion of the blood during the contraction of the ventricles, and the dilatation of the auricles; for there appears to be no doubt that the dilatation of one set of cavities takes place at the same moment with the contraction of the other, a fact which was stated some time before by Dr. Barry. I entirely coincide with Dr. Stokes as to the second sound and his researches will remove many of my doubts as to



the possibility of determining disease of the valves and other parts on either side of the heart. If his opinion be correct, the sounds produced by disease affecting the auriculo-ventricular valves should be synchronous with the first sound, while those occasioned by disease of the aortic valves should be synchronous with the second. The subjects of Dr. Stokes' and Mr. Hart's vivisections, were the rabbit and goat. These gentlemen arrived at the following conclusions:

"1st, The process of contraction begins at the auricular, and terminates at the ventricular portions of the heart.

"2d, The contraction of the auricle in the goat, was evidently preceded by that of the sinuses of the vena cava.

"3d, The impulse at the side is produced by the dilatation of the ventricle.

"4th, After the expulsion of the contents of the ventricle, an interval of apparent rest occurs, during which, however, the auricles are filling."

Having arrived at these conclusions, they next turned their attention to the action of the arterial system. They found,

"1st, That in the state of health, the impulse of the heart precedes the pulse at the wrist, by an appreciable interval.

"2d, That this interval is more perceptible in proportion to the slowness of the heart's action.

"3d, That the length of the interval is directly as the distance of the vessel examined from the heart.

"4th, That hence the wave of blood at each pulse is progressive through the arterial system, and not an instantaneous impulse, as has been supposed." Vide Ed. Med. and Surg. Journal, October, 1830.

Certain remarkable sounds, which accompany the action of the heart and arteries, require a few observations in this place.

1st, The blowing or bellows sound, (*bruit de soufflet*), as it is called by Laennec, from its resemblance to the sound produced by that instrument when blowing the fire. This sound accompanies the diastole of the heart, and when present in the greatest degree, entirely masks the natural sounds produced by the action of the heart. It is sometimes heard in the sub-clavian and carotid arteries.

2d, The sound of the saw or file, (*bruit de râpe*) is another phenomenon occasionally presented by the action of the heart. Both this and the blowing sound were formerly considered as invariably indicating disease of the valves of the heart; and although often present under such circumstances, yet are by no means to be considered as pathognomonic, as they may exist in a slight degree, without any organic lesion of the valves. Laennec states, that the only disorder which appeared to him constantly, or almost so, to accompany the bellows and file sound, was a state of nervous agitation, which, however, was more or less marked by other symptoms. These sounds are not unfrequently met with in young persons of a nervous temperament, and, in most cases, we can make ourselves pretty certain that they are owing merely to a nervous affection; for if we examine such patients in a state of repose, no particular sound will be



heard, but, after violent exercise, or during a state of agitation, they become instantly perceptible; whereas, if they proceed from disease, they will never be entirely absent, although they may be increased by every cause which tends to hurry the circulation, and may be heard at all times, in severe cases, even on the back. It appears probable, that even in the pure nervous affections, sounds resembling those produced by disease of the valves, may hereafter be found to depend upon a congenital disproportion between the heart and the orifices through which the blood passes, and which produces the effect only when the circulation is hurried.

Since writing the first edition, I have seen several dissections, which proved that both the *bruit de soufflet* and the *bruit de râpe*, but particularly the former, occasionally depended on hypertrophy, with dilatation of the cavities of the heart, as well as on disease of the valves. Examinations after death have convinced me, that both sounds may likewise be occasioned by disease of the aorta.

Dr. Scott, to whom I am indebted not only for the little knowledge I possess in the use of the stethoscope, but for much valuable assistance in writing this part of the work, informs me, that he has observed a very peculiar sound during the action of the heart in nervous persons;—it is a slight click or jingle, sometimes resembling the splashing of water in a metallic vessel. The first time he met with this sound, was in a very young woman, in a state of insensibility, where the sound gave the distinct idea of a fluid in the pericardium, agitated by the heart. I have noticed this remarkable phenomenon also, but am more inclined to attribute it to small quantities of fluid and flatus moving from one part of the stomach or bowels to another.

A similar error was committed by Laennec, who for some time considered a sound resembling the cracking of leather, pathognomonic of pericarditis.

3d, The purring or whizzing vibration,—the cat purr, may also be briefly mentioned. It is a peculiar sensation communicated to the hand placed on the cardiac region, and which Corvisart considered a sign of ossification of the valves, more particularly the mitral. This vibration is in general confined to the left side of the chest, and though it is no doubt met with in almost every case of considerable contraction of the valves, yet it is sometimes perceived in a slight degree when no organic lesion exists.

Before describing the different diseases of the heart, a brief enumeration may be given of the general symptoms which accompany these affections. In the early stages, it is of the utmost consequence to form an accurate diagnosis; but the general symptoms are very nearly similar in all. These are, habitually short and difficult respiration; palpitation, and a feeling of oppression about the heart on any sudden or violent exertion, as in running or walking up an ascent. The late Dr. Monro was so well aware of this, that before examining a patient suspected to labour under disease of the heart, he was in the habit of desiring him to ascend a flight of stairs quickly. Emotions of the mind frequently induce paroxysm of panting and dyspnœa. Sleep is often disturbed by sudden startings and fearful dreams; there is an anxious cast of countenance, and a marked de-

gree of irritability of temper ; determinations of blood to the head take place ; and very generally a disordered state of the digestive functions is observed, indicated by impaired appetite, flatulent distension, irregularity of the bowels, &c., which invariably aggravate the feeling of uneasiness about the heart. Sometimes the patient suffers most violent paroxysms of pain, which are occasionally attended with great vascular action and palpitation, at others with diminished vascular action, and a tendency to syncope.

In the last stages, the disease can in general be recognized at a single glance ; the patient is unable to lie down, he therefore requires to be propped up in a chair or bed ; the face is puffed ; the lips are swollen, and display the different shades of colour produced by impeded circulation through the lungs ; the legs and scrotum become œdematous, and dropsical effusions often take place into the cavities of the thorax, pericardium, and abdomen. Hæmorrhage from the lungs is not uncommon ; and the case some times terminates in apoplexy ; indeed, diseases of the heart frequently terminate in sudden death. The pulse varies much, according to the particular disorganization ; in hypertrophy, for example, it is hard, full, and bounding ;—in dilatation, feeble, compressible, and irregular in point of strength ;—in valvular disease, small, and easily rendered intermittent by exertion, and by mental emotions. Some of these symptoms are, however, common to other diseases ; and those of the earlier stages may depend on disorder of the digestive organs, or may accompany affections usually termed nervous. It is of extreme consequence that these cases should be distinguished, if it were only to save the reputation of the medical attendant, as patients so affected generally die suddenly, perhaps at a time when the physician has given a favourable opinion, or perhaps lightly estimated the complaints of the patient. With the assistance of the stethoscope and percussion, combined with an accurate study of the individual characters of the case, and the constitution of the patient, we shall be able to form a more correct diagnosis, than those who trust solely to the ordinary means of investigation.

In making our examinations with the stethoscope, we should be particularly careful that the patient is free from agitation, and has been in a state of perfect quietude for some time.

*Causes of diseases of the heart.*—The causes of diseases of the heart are imperfectly known ;—affections of the lungs, which give rise to long-continued and severe dyspnœa, are, no doubt, among the most frequent causes ;—they are considered by Laennec as the best ascertained. We know, perhaps with more certainty, that diseases of the heart give rise to various affections of the lungs, more particularly hæmoptysis and pulmonary apoplexy.

A disproportion between the diameter of the aorta and size of the heart, was considered, by Corvisart, as a constant cause of dilatation ; and it is probable that a congenital disproportion is a frequent cause of hypertrophy.

Affections of the mind have been considered as the most usual causes of diseases of the heart ; thus, we are told, that during the French revolution, these affections became much more common than at any previous period. The in-

fluence of depressing and exciting passions, in predisposing to disorders of this kind, can scarcely be questioned ; but it must be borne in mind, that about the period above alluded to, greater attention began to be directed to this branch of pathology, and in point of fact, these diseases became better understood, and more frequently recognized. Every cause which disturbs the balance of the circulation, producing an overload of blood about the heart and lungs, excites this class of affections ; hence I have been able to trace it to long-continued intermittent fevers. It would appear that rheumatism is a frequent cause of enlargement of the heart ; it is well known by practical men, that pericarditis sometimes comes on during an attack of acute rheumatism. We find that those who have suffered repeatedly from acute rheumatism, not unfrequently fall victims to enlargement, or other diseases of the heart. In what relation these diseases stand to each other, cannot at present be discussed. Gastric irritation is a very common source of disordered action of the heart, and, it is probable, often lays the foundation of structural disease in that organ.

In conclusion, it may be confidently stated, that no subject connected with the exercise of the medical profession, deserves more attentive investigation, or presents more views of practical interest and importance.

## CHAP. II.

### PALPITATION, AND ANGINA PECTORIS.

---

#### PALPITATION.

By this term, I mean the occurrence of an unusually strong and frequent pulsation of the heart, without any organic lesion; the palpitations produced by disease of the heart itself, are to be considered afterwards. The affection now under consideration, is to be regarded as purely nervous, occasioned by excessive indulgence in various passions, by mental emotions, and very frequently, by a disordered state of the stomach and bowels. Stimulants of all kinds, violent exercise, excessive depletion, occasionally produce it. Palpitation is more readily excited in persons of a nervous and sanguine temperament; when first observed, the affection is generally slight and transient, but by frequent repetition, the organ at last becomes so irritable, that the least circumstance reproduces it.

Nervous palpitations are frequently very distressing even when the body is in a perfect state of repose, particularly during the first part of the night, and often prevent sleep for many hours. The action of the heart is not only accelerated, but increased in impulse and sound; sometimes the action is tumultuous, and occasionally so strong, that the person affected feels it painfully. There is sometimes a sensation of internal agitation, particularly in the head and abdomen, and, as happens in hysteria, the urine is copious and limpid.

Nervous palpitations are not to be neglected, as by frequent repetition, they may lead to disease of structure, either in the heart itself, or in some other organ. Laennec says, that he has never seen any proof of the accuracy of this opinion, but I think I have.

According to Laennec, in nervous palpitation, the first impression conveyed by the stethoscope is, that the heart is not enlarged. The sound, though clear, is not heard loudly over a great extent, but this very much depends upon the thickness of the parietes of the chest. In thin people, I hear the sound during palpitation, in every spot on the anterior part of the chest; and when the heart is acting very violently, I have perceived it in the back also. With respect to the impulse, Laennec states, that in the nervous affection, the head of the ob-



server is never sensibly elevated. This, he says, is the most important and certain of any sign, when taken in conjunction with the frequency of the pulsations, which are always quicker than natural, most frequently from 84 to 96 in the minute. I have seen and felt the impulse of the heart in nervous palpitation, not only elevate the head of the observer, but raise the bed-clothes. Dr. Ferrier, one of the most accurate of observers, in detailing a case of violent palpitation of the heart, states, (p. 205, vol. 1st,) "Every stroke of the pulsation raised her clothes, so as to be visible at some distance;" under the use of castor, with attention to her clothing and diet, she recovered "in the course of a few weeks." In this affection, there are rarely any signs of determination of blood to the head or chest.

It is rare that palpitations produced by functional derangement of the heart continue long at any time; they are in general transient, and are perhaps less troublesome when the patient is taking exercise in the open air, than at other times. When of long continuance, and without intermission, they will for the most part be found to depend on some organic lesion.

*Treatment.*—Venesecction, or the application of leeches, is sometimes advisable, particularly in young plethoric individuals, who are affected at the same time with some febrile movement. French practitioners recommend the application of leeches to the anus in nervous palpitations. Laxatives, cold or warm bathing, moderate exercise in the open air, light nourishing diet, early hours, and avoiding the exciting cause, will usually be found successful. When the affection, however, resists these remedies, various antispasmodics have been recommended, as opium, ether, musk, castor, and valerian; of all these, perhaps the best is the volatile tincture of valerian.

#### ANGINA PECTORIS.

THIS dreadful disease generally makes its attack in the following manner: It is commonly first felt when an individual is walking up-hill; he is suddenly and unexpectedly seized with an agonizing sensation in his breast, a little to the left of the sternum; he experiences a sense of constriction and suffocation, which obliges him to stop. After a little rest, these symptoms disappear, and he flatters himself that it is nothing more than a common stitch in the side, from walking too quickly. I have known a person fall down in a state of temporary asphyxia, even on the first attack; those affected in this manner, fancy that they have merely fainted from excessive pain. Several such attacks may take place in the course of a few years, or even a few months, the paroxysms continuing only for one or two minutes, and the person thinks nothing further of them. In the course of time, however, they return more frequently; the pain becomes more and more excruciating, and the paroxysms continue longer. In the early part of the disease, exercise seems to be required to bring on a paroxysm, but when more advanced, every little excitement, or exertion of mind or body, or eating an indigestible article of food, produces an attack; at last, the paroxysm comes on without any assignable cause, even when in bed, and during sleep.

At the first onset of the disease, the pain is usually confined to the breast, in the region of the heart; afterwards it extends towards the shoulders, and frequently affects the superior extremities down to the wrists. I had a gentleman under my care, who complained of the pain extending from the breast to the arms, stopping exactly at the insertion of the deltoid muscle on each side. In severe cases, the patient is pale, perhaps quite ghastly,—his features being contracted,—his eyes hollow,—his countenance expressive of the most dreadful suffering;—his body perhaps cold, and covered with a cold, clammy sweat;—his respiration is quick, but free; that is to say, the patient can, if you desire him, occasionally take in a deep inspiration. In such cases, the pulse is in general slow, and so contracted and weak as scarcely to be perceptible; but this varies much, for in other instances, particularly when the skin is warm, and the face flushed, the pulse is quick, strong, and irregular; I have seen cases in which it was perfectly natural in strength and number of pulsations during a paroxysm.

In slight cases, the whole paroxysm is sometimes over in half an hour; in others, in an hour; and it ceases often with a discharge of flatus from the stomach and bowels. Sometimes it disappears suddenly, leaving no sense of uneasiness behind; at others, considerable soreness remains in the chest for several hours or days.

In the most dreadful cases, the patient never feels entirely free from uneasiness and constriction in the chest, and he dreads making the least exertion.

In the year 1826, I was requested, by one of my pupils, to see a gentleman who had several attacks of this disease, and was then labouring under one of the most severe paroxysms I have ever witnessed, which had continued for several days before my visit. It was most afflicting to see a strong and a brave man weeping like a child, and imploring relief in the most impassioned strain.

An interesting case of angina pectoris occurred in my dispensary practice in the year 1828. The patient was carefully attended by Dr. T. Briggs, now of Liverpool, from whose notes the following particulars are taken:—James Terry, æt. 38, a remarkably tall and athletic man, by trade a sawyer, habits temperate. Has been ill three years; his complaints began with occasional fits of palpitation, and severe pain in the region of the heart; but he was able to continue at his work for the three first months. He was then obliged to relinquish his occupation from the frequency and violence of the paroxysms, which were most severe when walking, or making any unusual exertion. He found relief by pressing a walking-stick strongly against the breast during the fit. His symptoms have become progressively worse; he has been under the care of many medical gentlemen, and has been put under the influence of almost every known remedy. Mr. Liston ordered him to be bled twice, and blistered many times without relief. In the infirmary of Edinburgh, under Dr. Alison's care, he was bled again, and took mercurial medicine till the mouth was made sore, with temporary benefit. But in a fortnight he became as bad as ever he had been, and Dr. Alison advised him to go to the country. In continuing the history of the case, he stated, that a gentleman punctured "*the bag of his*

*heart," and blew air into it; "but I understand," says Dr. Briggs, "that the air was injected from a bladder into the cavity of the left pleura, and was taken out next day."*

Terry is now (13th Nov. 1828) seldom free from violent pain in the chest, which he compares to that produced by boiling water applied to the body.—The pain shoots down the arms to the wrists; it is always brought on by any muscular exertion, during the act of eating or drinking, and voiding stools or urine, and by laying down in a recumbent posture. He is always worse during the night. The violence and extent of the pain can be diminished by taking a deep inspiration, and keeping the lungs distended, and by pressing the chest with considerable force against the back of a heavy old-fashioned arm chair, which he keeps for the purpose, and in this position he generally spends the night. The inferior extremities are œdematous, and greatly enlarged. Appetite good; but he eats very little, and that slowly, in consequence of the exacerbation of pain during the act of swallowing. Digestion appears to be perfect, and the state of the bowels regular. The heart's impulse is very great,—it shakes the whole frame, and when the patient leans over the chair, the pulsations may be counted by the violent motion of the heart against the posterior part of the thorax. Over every part of the thorax, there is a sound like the rushing of water, corresponding to the contractions of the heart. This sound masks all other sounds, even that of respiration; and a similar sound is perceived by applying the ear over any considerable artery. The pulse is strong and full,—it vibrates against the finger, imparting a sensation as if the artery were ready to burst. The pulse, which is sometimes stronger in one arm than the other, generally beats 60 in a minute,—now and then there is a double beat, as if an additional pulsation were interposed; during a paroxysm the pulse is suddenly quickened so as to beat 120.

At this period the patient's sufferings were occasionally mitigated by large doses of the wine of colchicum, and tincture of hyosciamus, but he soon gave up these remedies, from the languor and drowsiness they occasioned. Death took place early in the morning of the 9th December, having complained for some time previously of severe pain in the right thigh and knee, which were intensely swollen from effusion into the cellular substance. Before his death, he talked calmly of the event which was to terminate the most severe bodily suffering I have ever had the misfortune to witness, and he desired his wife to allow me to take away any part of his body that might be found diseased on dissection.

The examination of the body took place on the following day, 10th December, 36 hours after death.

Putrefaction had already made great progress; the cuticle was every where loose, and the body crepitous from air into the subcutaneous cellular tissue. The lower extremities and scrotum were tense from œdema. The thorax capacious and well formed, only it was deeply indented by the constant pressure on the chair.



On opening the thorax, the pericardium, containing a heart of enormous size, seemed to fill the chest, and concealed the other contents. It lay obliquely across, occupying a space of about fourteen inches, extending from the 7th left rib to the 1st on the opposite side. In size it resembled a large ox's bladder fully distended. The right lung, compressed into a narrow space, adhered firmly to the surrounding parietes every where, except in the antero-superior part. It was greatly engorged with blood, but upon minute examination, was found healthy in structure. The left lung, free from adhesions, was found compressed into a small space also. The heart was then carefully removed, when the fore part of the bodies of five or six of the dorsal vertebræ were observed to be partially absorbed by the pressure of the heart. On opening the pericardium, it was found to contain a small quantity of serous fluid, and some bubbles of air; its coats presented a natural appearance, and there were no adhesions with the heart. The heart appeared to all present to be about the size of that of an ox,—it was enlarged in every part, and the left auricle and ventricle were fully distended with blood. Both auricles and ventricles were in a state of hypertrophy, and greatly dilated; the left ventricle contained more than twelve ounces of blood. The orifices were all remarkably dilated also, but the valvular apparatus was found in a sound state. The size of the aorta was not much, if any, increased from the arch; its internal surface was vividly red, as were the mucous membranes in every situation. The heart and pericardium, forming two dried preparations, are preserved in my museum.

Angina pectoris rarely attacks people under forty; gouty subjects, and those who are corpulent, seem to be more liable to it than others. It appears to attack men more than women; and I believe that sedentary habits create a predisposition to it, as well as long-continued and very violent bodily exertion.

*Appearances on dissection, and pathological remarks.*—This disease has attracted considerable attention on the part of pathologists to ascertain its nature and seat, since it was first noticed by Dr. Heberden in 1768, in a paper contained in the 2d vol. of the "Transactions of the College of Physicians," of London.

Subsequent writers have committed a great error by attributing angina pectoris to one particular disorganization;—thus, one has attributed it to ossification of the cartilaginous extremities of the ribs;—a second, to ossification of the valves of the heart;—a third, to fat accumulated about the heart;—a fourth, to dilatation and hypertrophy of the heart. Dr. Parry supposed that it depended on ossification of the coronary arteries;—Dr. Haygarth, on inflammation of the mediastinum;—Dr. Hooper, on diseases of the pericardium;—and there are many who think it is produced by asthma. Dr. Hosack, an American physician, is of opinion, that it most frequently arises from general plethora, more particularly "from a disproportionate accumulation of blood in the heart and large vessels." I have seen each of these morbid appearances on dissection, in subjects who were never affected with angina pectoris; and it has been alleged, that patients have died suddenly from this affection, in whose bodies not



the slightest trace of disease of any kind was perceptible, which has led some to assert that it depends upon scrofula, syphilis, a nervous temperament, or a peculiar affection of the *par vagum*. Dr. Parry's opinion seems still to have great weight with many in the profession; but it may be mentioned, that I have seen two cases in which the coronary arteries were extensively ossified, and a third, in which they were completely so, and yet none of the patients had symptoms of this disease. A remarkable case of the same kind, which happened many years ago, is detailed in the 1st vol. of the "Medical Communications," by Mr. Watson. In justice, however to the memory of Dr. Parry, it ought to be stated, that he did not attribute the disease to the effects of ossification of the coronary arteries alone, for he distinctly states, that the symptoms shew that an accumulation of blood *takes place about the heart and large vessels*. This statement goes so far to confirm the opinion of Dr. Hosack, which Dr. Forbes assures us is more in accordance with his own observation than any of the other opinions; but he adds, (at page 692, of his Translation,) that "in persons subject to this complaint, in whom no severe organic disease of the heart existed, I have generally found, by auscultation, that the organ was possessed of thin parietes and feeble powers." In my work on "puerperal fever," which was published in the year 1822, a case of angina pectoris is recorded, (at page 83,) which was evidently produced by an accumulation of blood in the heart and large vessels. The life of the individual appears to have been saved by timely blood-letting; ten years have now elapsed, and there has been no tendency to a return of the disease.

*Treatment.*—The symptoms of angina pectoris occasionally accompany such a variety of organic lesions, and take place from what, to all appearance, may be considered a neuralgic affection, that is it scarcely to be wondered at that so many remedies have been recommended, and so few found serviceable.

If there be marks of general plethora, with or without an organic affection of the heart, blood is to be taken from a vein, particularly if there be signs of an accumulation of blood either in the heart or lungs; at the same time, we must be careful to restore the heat of the body, if it be below the natural standard. I have so frequently seen a neglected state of the stomach and bowels precede an attack of angina pectoris, that I consider it of the greatest importance to clear out the *primæ viæ* as speedily as possible. Should the attack come on soon after a meal, an emetic is to be prescribed; if not, purgatives are to be had recourse to, and repeated at short intervals. I have seen leeches serviceable, as well as the application of a large mustard plaster over the præcordial region. Long-continued counter-irritation on the chest, with tartar-emetic ointment, is to be persevered in for a considerable time, and repeated at intervals, upon the least unpleasant sensation in the chest.

It is a great matter to be able to say, whether or not there be any organic disease of the heart; and although the stethoscope is said not to be so useful in diseases of the heart as of the lungs, yet in a majority of cases, taken along with other symptoms, we shall be able to determine this point with sufficient

accuracy. If there be no disease of the heart, very large opiates, united with colchicum, will be occasionally found singularly beneficial; even in Terry's case it was serviceable. If the bowels are in a bad state, a pill may be exhibited every second or third hour, composed of five grains of calomel, the same quantity of opium, and three or four drops of oil of croton. Many object to the use of opium in such cases, but without sufficient grounds. The celebrated John Hunter took opium, it is alleged, with an aggravation of the disease; but the small doses he used were quite inadequate in such a severe disease. It is stated by Sir Everard Home, that John Hunter was advised to take wine, which he did accordingly, but found the paroxysms more readily brought on after it. Laennec speaks highly of magnetism in such cases, and although too much cried up at one time by medical men, he thinks it too much neglected at present. He used it in the following manner:—"I apply (says he) two strongly magnetized steel plates, of a line in thickness, of an oval shape, and bent so as to fit the part,—one to the left præcordial region, and another exactly opposite on the back, in such a manner, that the magnetic current shall traverse the affected part. This method is not infallible, any more than others employed in nervous cases; but I must say that it has succeeded better in my hands in the case of angina, than any other, as well in relieving the paroxysm, as in keeping it off." And he subsequently assures us, that when the magnet affords little relief, a good effect has followed the application of a small blister under the anterior plate. (Translation, p. 693.)

Should our remedies unfortunately fail in producing relief during a paroxysm of angina pectoris, we have the consolation to know that much may be done to prevent a return of the disease. Fatigue and violent exercise, together with all excesses, are to be carefully avoided, as also stimulants and the application of cold. The diet of a patient so circumstanced must be light, and easy of digestion, and he should limit himself to a certain quantity of food by weight; and he should not drink more than is necessary for the purposes of digestion. Assiduous attention must be paid to the state of the bowels, to prevent constipation; and the patient should regulate himself by medicine, or other means, that he shall have one or two stools daily.

## CHAP. III.

### PERICARDITIS AND CARDITIS.

---

#### PERICARDITIS.

THIS is a disease, which is seldom so well marked in its characters, as the importance of the organ affected would lead us to expect. It is sometimes so insidious as to produce considerable disorganization before severe symptoms appear to attract our attention; at others, it creates constitutional disturbance, which indicates a disease of great severity; but our attention becomes fixed, perhaps, upon some local pain, at a distance from the seat of the disease, to relieve which, our best efforts are directed. In truth, as Laennec observes,—“There are few diseases attended by more variable symptoms, or of more difficult diagnosis than this.” And he assures us that it is as frequently mistaken as recognized:—“This is the result (says he) of my own experience up to the present time; and to mine I may add that of many of my medical brethren, and among others, M. Recamier.” Cullen confesses that he knew little upon this subject,—so little, that he has not devoted more than twenty-seven lines, in his work on the practice of physic, to the consideration of carditis and pericarditis; and his concluding words are,—“There is therefore, upon the whole, no room for our treating more particularly of inflammation of the heart or pericardium.” (Par. 383.) Nevertheless, he has given the following definition:—“Pyrexia; pain in the region of the heart; anxiety; difficult respiration; cough; unequal pulse; palpitation; syncope.” All the systematic authors seem unfortunately to have followed this definition, in the descriptions which they have given of this disease, instead of copying from nature.

By pericarditis, I mean an inflammation of an acute, sub-acute, or chronic nature, of the serous membrane which lines the pericardium, and also that which gives an external covering to the heart itself, and the roots of the great vessels. In describing the phenomena of this disease, it must be kept in recollection, that in this, as well as in other inflammatory affections, a great number of varieties occur, giving rise to symptoms more or less urgent. In two or three instances, I have seen the symptoms so urgent, as to produce great affliction; in these, the pain was situated in the region of the heart, increased on taking an inspiration, as well as by any considerable motion of the trunk,

which produced a tendency to syncope; the breathing anxious and irregular, rather than difficult; cough but slight in proportion to the anxiety of the breathing; the countenance sharp, and peculiarly expressive of distress; the pulse was regular at first, but small like a wire; it generally becomes irregular, however, during the act of speaking, and when the patient moves. It is of great consequence, in all severe diseases, to compare the strength of the pulse at the wrist, with the impulse of the heart, by attending to its action, either by placing the hand over the præcordial region, or by applying the ear in the same situation; and this precaution is peculiarly necessary in diseases of the heart and pericardium. In the latter, the pulse, as already stated, is generally wiry and small, when the action of the heart itself is perhaps excessively strong, or I should have rather said, tumultuous. Even in insidious cases, an inequality will sometimes be perceived between the strength of the heart's action, and that of the pulse at the wrist. A case lately occurred to me of an insidious nature, which I shall briefly relate:—A middle-aged gentleman, having an extraordinary curvature of the spine, but who had, nevertheless, enjoyed robust health, remarkable for agility and muscular strength, called at my house to seek advice. He told me that, for a week previously, he had been affected with an asthmatic complaint, which had now increased to such a degree, that he could scarcely use any exercise; that he passed sleepless nights; was afflicted with cough, attended by some expectoration; but he described his greatest suffering to proceed from violent spasmodic contractions, affecting the muscles of the extremities. He had not lost much flesh, but laboured under considerable oppression and debility. On examining the chest, he was found to be somewhat chicken-breasted; he was unable to fill his lungs completely; the action of the heart was felt over a large space, tumultuous and irregular, intermitting occasionally six times in the minute, generally three or four; the pulse at the wrist having the same irregular and intermittent character, but it was small and weak in proportion to the strength of the heart's action. He stated that his appetite was bad, that it was almost impossible to keep his extremities warm, and that he chiefly attributed his complaints to flatulency. I desired him to go home, and upon no account to venture abroad again. Next day I found him rather better, having had several copious stools, with which he passed a great quantity of flatus;—this was on Wednesday. On Thursday and Friday he still continued to improve; but I had no doubt he laboured under an affection of the heart, and, much to his disappointment, gave strict orders that he was on no account to go out. On Saturday, I found him very ill, complaining of great oppression in his breast, and difficulty of breathing; but his chief suffering proceeded from cramps in his extremities, and occasional spasmodic rigidity of the whole body, which was sometimes bent backwards, supported by the occiput and heels; and his landlady said, that the spasms were so severe during the night, that he could scarcely be kept in bed. He died suddenly in the course of the following night. On dissection, the brain was found to be quite healthy. No trace of disease was found in the spinal



cord, except that a very old adhesion was discovered, and two or three large ossific scales on the surface of the arachnoid membrane.\* The pericardium was large, and contained a considerable quantity of turbid serum, with a deposition of lymph, adhering, in various places, to the surface of the heart, but which was more abundant at the roots of the great vessels; the heart itself was large, although it did not seem disproportioned in its different parts; the valves were sound. That I mistook the case is very evident, and it is related expressly to shew the circumstances which led me astray in the investigation. Had the individual not had a deformed spine, and the severe cramps, I might, in all probability, have detected the true nature of the disease. I considered the dyspnœa to proceed from a nervous affection of the lungs, complicated with enlargement of the heart. Previously to the occurrence of this case, I would have declared it to be impossible for any one labouring under pericarditis, to be able to walk more than half a mile up a hill, which this gentleman did when he came to me, on the Tuesday before his death; and when returning home, before he reached his lodgings, he had to mount three flights of stairs. Since the publication of the first edition, I have seen several severe and insidious cases, all of which were connected with acute rheumatic attacks. In one fatal case, there was no pain in the thoracic region, but the patient complained of oppression, and was affected with slight dyspnœa; the action of the heart was tumultuous, and the pulse quick. The tongue was rough, deeply fissured, and red.

Laennec and other practical physicians agree, that, in the present state of our science, we are not acquainted with any symptoms which point out, with certainty, the presence of pericarditis. Perhaps this is more to be attributed to imperfect observation of the cases which have occurred (very good examples of which are quoted above,) than to the obscure nature of the disease itself. M. Louis thinks that our ignorance of diagnostic signs is to be attributed to our imperfect observations,—and in this opinion Dr. Scott concurs. According to these gentlemen, the observations of authors have generally been incomplete,—many of the means of diagnosis have been neglected, and several circumstances of the greatest importance in forming an opinion of the nature of the disease, have been overlooked. From his own observations on this disease, and from an analysis of the cases on record, M. Louis is inclined to draw the following conclusions:—that pericarditis is characterized by pain in the region of the heart, sometimes extending to the back and epigastrium, attacking the patient suddenly, and accompanied with a greater or less degree of oppression, and in certain cases with palpitation,—irregularity and intermission of the pulse, and more particularly by a dull sound in the præcordial region, the other parts of the left side of the thorax remaining perfectly sonorous. Syncope sometimes also accompanies these symptoms, and occasionally infiltration of the extremities,—this probably takes place only when the progress of the disease has not been very rapid; but when it does appear, as it is one of the symptoms of disease of

\* This beautiful preparation is preserved in my museum.

the heart, it ought particularly to fix our attention, and lead us to suspect an affection of that organ, or confirm our diagnosis, if we have already formed one. From the cases on record, Louis thinks that the disease may be detected in half of the cases where it exists; and when free from complication, he considers it to be as easily recognizable as the best marked pleurisy.

*Causes.*—These are, generally speaking, the same as produce other inflammatory affections within the chest. It may be attributed to moral causes also, such as grief and anxiety; and there can be no doubt that it is often occasioned by a metastasis during the course of rheumatism and gout.

*Appearances on dissection.*—There is very seldom any redness to be seen in the acute affection; but we always find flakes of lymph floating, in a larger or smaller quantity of serum, and attached to the membrane itself. Sometimes the pericardium is amazingly distended, containing a quart, and even more of this fluid. When any redness is observed, it is generally in small spots upon the surface of the pericardium. In some chronic cases, the pericardium is much thickened, and the heart enveloped with exudation. As Laennec very justly observes, it rarely presents the appearances of an equable membranous layer, like the false membrane of pleurisy; on the contrary, its surface is most frequently marked by a great number of rough and irregular prominences. If the patient survive the first effects of the effusion, the lymph part becomes quickly absorbed, and afterwards we find the albuminous matter slightly glueing the pericardium to the heart. I have seen some cases where there was apparently no serous effusion, but a considerable quantity of lymph thrown out every where over the heart.

Occasionally, we find the pericardium closely attached to the heart, forming a dense fibro-cartilaginous mass, incapable of being separated, even by dissection. Within these few years, I have seen two cases of this sort; one individual died during an attack of erysipelas, from the united effects of inflammation of the membranes of the brain and mucous membrane of the lungs; the disease in the pericardium must have been of very long standing, but he enjoyed, nevertheless, excellent health, and great activity of body and mind, up to the period of his last illness. The subject of the other case was a young athletic man, who died from inflammation of the substance of the brain after a very short illness. About a year before, he had a severe indisposition, which was supposed to be hepatitis; and treated accordingly. After being in considerable danger, he gradually recovered health and strength. On dissection, the pericardium was found thickened and indurated, adhering firmly to every part of the heart, it being impossible to separate it in many places, even by careful dissection, without taking away the proper membrane of the heart. These two cases, and several others which I could quote, completely disprove the assertion of Corvisart, that no person can live, and preserve a good state of health, who is effected with a complete and close adhesion of the pericardium to the heart. On other occasions, the false membrane appears to be converted into cellular sub-

stance; and although united to the heart, the adhesions are loose and long, and the pericardium can be easily separated.

On the surface of the heart, we sometimes observe opaque, white spots, generally of an oval figure, about an inch in length, sometimes much smaller, and at others, very much larger. A great difference of opinion prevails respecting the true nature of these spots. From my own observations, and examinations after death, I have no doubt that they are the result of a partial inflammatory action on the surface of the proper covering of the heart. I used formerly to find it impossible to separate these in such a manner as to prove whether they were on the outside, or beneath the serous membrane. At last, after submitting the parts to maceration for a few days, I have been able to remove them completely from the heart, leaving the serous membrane untouched, and apparently in a healthy state. Baillie and Laennec are of the same opinion; Corvisart, on the other hand, considers these productions to be situated beneath the serous membrane, and entirely unconnected with inflammatory action.

Laennec states, that a tuberculous formation may sometimes take place, and thereby convert the acute into the chronic disease, as it frequently happens in the case of pleurisy and peritonitis, of which he has seen two instances; a third is noticed by Corvisart; and I have seen one case of it myself, in a man who died of a surgical disease, quite unconnected with that of the heart.

The muscular substance of the heart, in many of these cases, looks whitish, as if it had been macerated. Corvisart, and many others, suppose this loss of colour, particularly when attended by softening, to be a sign of inflammation in the substance of the heart itself; but I feel disposed to join Laennec, in doubting the correctness of this opinion. He states, that we can never be sure of the existence of inflammation in a muscular organ, unless we find a deposition of pus, or lymph, among its fibres.

*Treatment.*—If the disease be detected early, there can be no doubt of the propriety of general bleeding carried to the utmost extent the patient can bear, and repeated or not, according to circumstances. Leeches are to be had recourse to, when necessary; and it must be recollected, in treating an inflammation of a vital organ, that decision and promptness are of the utmost consequence to the patient. Antimony is subsequently to be used, together with counter-irritation. Purgatives must be occasionally employed, together with the strict antiphlogistic regimen.

If called late to a case, and when general blood-letting would be, perhaps, attended with immediate danger, we must have recourse to local abstractions of blood, by means of leeches, and throw mercury into the system as quickly as possible. I am disposed to attribute the recovery of the last of the two cases already quoted (at page 357), in which the pericardium was found attached to the heart, to the action of mercury, which was administered for the supposed nepatitis.



## CARDITIS.

INFLAMMATION of the proper substance of the heart, is a very rare disease ; I have seen only one case of it, which was treated for the affection commonly known by the term *angina pectoris*. The symptoms were unusually acute, and continued for four or five weeks, the patient never passing a night without fever, and never two days without having several severe paroxysms of suffering.

In general, however, the symptoms are represented as being similar to those which arise from inflammation of the pericardium, and it appears probable that the two diseases have been often confounded.

*Appearances on dissection.*—Redness, and even injection of the capillaries, are equivocal signs of inflammation of the heart ; so is some degree of softening of that organ, which, although sometimes observed after symptoms which indicated disease of the heart, yet is oftener seen when such signs did not exist ; and I am convinced that the state which is usually noted down in reports of dissections, as softening of the heart, is frequently nothing more than the natural progress towards decay. Laennec states, that he has met with only one instance of an abscess in the walls of the heart. The subject was a child twelve years old ; the abscess was situated in the parieties of the left ventricle, and might have contained a filbert. In another case of a man of sixty years old, he found an albuminous exudation, of the consistence of boiled white of egg, and of the colour of pus, deposited among the muscular fibres of the left ventricle. “The patient had presented symptoms of an acute inflammation of some of the thoracic viscera, without precisely indicating its site. Orthopnœa, and a feeling of inexpressible anguish, had been the chief symptoms.” (Page 621.) In the case to which I have already alluded, a deposition of a matter, whether pus or lymph could not be determined, was found near the apex of the heart, in the substance of the left ventricle. I would particularly refer the reader to Dr. Gairdner’s interesting case of carditis, recorded in the 2d vol. of the “*Medico-Chirurgical Transactions of Edinburgh*.” The subject of it died of another disease, eight months after the original attack, and the following is an abstract of the appearances in the heart : “Near to the apex of the heart, we found a layer of dense, organized lymph, closely investing a part of the parietes of both ventricles. On attempting to separate a portion of this layer, it was found to be firmly united to the substance of the organ, dipping between its muscular fibres, in the form of dense cellular tissue.” (Page 241.) The symptoms in this case were, preternaturally violent and rapid action of the heart, and a sensation of throbbing in the temples, with head-ache.

Ulcerations of the heart, according to Laennec, have been more frequently observed than abscess, but it would seem they are more common on the internal surfaces of the heart, than on the external. Dr. Baillie observes, that although authors have mentioned cases of abscesses and ulcers of the heart, he is persuaded they are extremely rare. (*Morbid Anatomy*, p. 20.) He also states, that mortification still more rarely takes place. Lieutaud, however, notices it



(tom. 2. p. 33.) Dr. James Kennedy, lately of Glasgow, has published a most interesting paper upon this subject, in illustration of a case of acute carditis, terminating in gangrene of the heart, in the "Medical Repository" for April 1824, which is well worthy of perusal. It contains sufficient proof, not only of the author's skill in pathological inquiries, but of his critical acumen. On dissection, it is stated, that "twenty ounces of turbid serum were taken from the chest; it had an impure orange colour, and a fetid smell. The pericardium inclosed four ounces of a fluid in all respects similar. On the internal surface of this capsule, was much vascular net-work, dark, as if composed of injected veins. All parts of the heart, external and internal, exhibited distinct marks of having been the seat of gangrenous inflammation. They were preternaturally flaccid, and dark, as the darkest coagulated venous blood; they could be easily perforated by the finger. When thus torn, they exhaled a putrid odour, but no blood exuded from their ruptured vessels. The left ventricle, in particular, was quite livid, and destitute of its muscular tenacity; it was a little firmer than cerebral structure. When lacerated, it threw out a most offensive smell, similar to the odour of putrescent animal substance. All the cavities of the heart were empty; but the large veins, especially the abdominal, were loaded with grumous blood." (Page 279.)

*Treatment.*—A similar mode of treatment as that recommended in pericarditis is to be followed. The result of Dr. Gairdner's case, is a strong proof in favour of large bleeding, which prevented the diseased action from spreading, and preserved life, even after extensive disorganization had taken place. He took thirty ounces of blood from a vein in the arm, on the 16th March; on the 17th, it was repeated in the same quantity; and again on the 18th, the doctor states, he "ventured" on another equally "copious" abstraction of blood. During that night, from the shifting of the bandage, the patient lost several ounces more, and subsequently had leeches applied.

## CHAP. IV.

### HYPERTROPHY OF THE HEART.

---

By hypertrophy of the heart is understood a thickening or increase in the muscular substance of one or more of the cavities of the heart. This may perhaps be considered rather as a morbid disposition, than a real organic disease; that is to say, in its simplest state it may continue for an indefinite period; it is seldom fatal of itself, and proves so, either from the causes which have given rise to it, or from the diseases which it may induce in other organs.

Hypertrophy frequently exists without complication; at other times, we meet with it combined with dilatation and contraction of the cavities of the heart, as well as ossification of the valves. In this class of diseases, as well as in most others, we are constantly to bear in mind, that when one organ labours under disease, others in a short time give evidence of participation.

I shall describe this disease in its most simple state, and point out the leading symptoms which attend it; but young practitioners should be aware, that they must not invariably expect to meet the disease under the precise form in which it may be delineated. After due deliberation, with regard to the different arrangements which have been adopted in treating of hypertrophy, I give a decided preference to that of Bertin, who describes it under three forms; 1, simple hypertrophy, without change in the capacity of the cavities of the heart; 2, with the increase in the capacity of the cavities of the heart,—the *active aneurism* of Corvisart,—the *hypertrophy with dilatation* of Laennec, which is the most common form of the disease; 3, hypertrophy with diminution in the capacity of the cavities of the heart.

Hypertrophy is more common in the left ventricle than in the right, and is occasionally met with in the auricles. When the whole heart is affected, it sometimes attains a most enormous size, appearing, when the thorax is opened, to fill both sides of the chest.

In the natural state, the heart is about the size of the closed fist of the subject not tightly clenched. The thickness of the walls of the left ventricle is more than double that of the right, and of sufficient firmness not to collapse when cut into. The right ventricle collapses when divided; it is a little more capacious than the left, and the columnæ carneæ are of a larger size.

In the diseased state, we sometimes find the heart three or four times the above-mentioned size; and when the left ventricle is affected, its walls are frequently more than an inch, or even an inch and a half in thickness,—the greatest increase is at the base of the heart, decreasing towards the apex; although this rule is occasionally reversed. The columnæ carneæ also acquire a proportionate enlargement, and even the septum between the ventricles participates in the disease.

The capacity of the ventricle is sometimes so much diminished, that Laennec informs us, in a heart double its natural size, he has seen it so small, as scarcely to contain an almond in the shell. In such cases, the apex of the heart is blunted, and formed entirely by the left ventricle, which appears to constitute the whole of the heart, the right looking more like a process of it.

In hypertrophy of the right ventricle, the thickening is never so great as in the left, and it is more uniform.

The causes of the disease have been already alluded to. The increase of the nutrition of the heart, has been compared to that of the muscles of the arm of the blacksmith; and all causes capable of increasing the action of the heart, have been assigned as the sources of hypertrophy; such are all affections of the lungs, impeding or retarding the circulation between the right and left cavities of the heart; and there can be no doubt, that individuals of a sanguine and plethoric temperament are most subject to this disease.

*Signs of hypertrophy of the left ventricle.*—The general symptoms have been already mentioned. In this disease the patient is less subject to violent and sudden attacks of palpitation than in dilatation, but he is more sensible of the constant action of the heart. On applying the hand to the chest, it is met by a strong and extended pulsation, sometimes as if the whole heart were raised against the hand, at other times only its apex. The pulse is generally full, strong, and vibrating, appearing as if the artery were constantly distended. The raising of the ribs is quite visible, and in hypertrophy with increase of capacity, the action of the heart can be heard at some distance from the patient.

The sound on percussion is dull, and on applying the stethoscope between the cartilages of the fifth and sixth ribs, a very strong impulse is felt, sufficient to raise the head of the observer, and accompanied with a duller sound than natural,—it is more prolonged in proportion as the thickening is more considerable. The contraction of the ventricle is very short, and productive of little sound, unless the disease be complicated with considerable dilatation.

We must therefore distinguish between simple hypertrophy, and hypertrophy with increase in the capacity of the cavity. In the former, the sound is confined to a very limited space, it is scarcely perceptible under the left clavicle, and forms a remarkable contrast to the force of the shock. In the latter, the intensity of the sound is increased,—we have the strong impulse as in hypertrophy, and the loud sound as in dilatation. The sound is sometimes so great, as to be heard over every part of the chest. The pulsations of the carotid and other arteries, are frequently visible.

*Signs of hypertrophy of the right ventricle.*—The signs are precisely the same as already described; that is to say, the heart, as explored by the cylinder, gives similar results; with this difference, that the shock of the heart's action is greater at the bottom of the sternum, than between the cartilages of the fifth and seventh ribs, which is the reverse of what takes place when the disease is in the left side of the organ. This sign, drawn from the place where the heart is heard beating with the most force, according to Laennec, is infallible. Lancisi described a swelling and pulsation of the jugular, as a sign of aneurism of the right ventricle. This symptom was rejected by Corvisart, who says he has seen it where there was hypertrophy of the left side. Laennec differs with Lancisi, and he informs us, that he never met with it in hypertrophy of the left ventricle, unless there existed at the same time a similar affection of the right; while he has uniformly seen it wherever the right side was affected in a severe degree. We may, therefore, regard this as a pretty certain sign.

Hypertrophy of the auricles, considered as a disease, is not of frequent occurrence, and therefore is not of so much importance,—it appears to be always consecutive to some other affection,—either to a disease of the valves, or some obstacle to the circulation. If Laennec's notions respecting the sounds produced by the heart's action be incorrect, it follows that many of his stethoscopic indications must also be erroneous. It is believed by some, that violent impulse of the heart depends upon hypertrophy of the auricles; I have no doubt that occasionally this is the case, but I am never inclined to attribute this phenomenon to the increased bulk of the left ventricle. At least, I have always seen impulse great in hypertrophy of the ventricles. The subject is open to future investigation.

Hypertrophy is sometimes primitive, but is perhaps frequently consecutive to some other disease. It commonly proves fatal by the effect which it produces on other organs, more especially on the brain and lungs.

No fact is better ascertained, than the influence which hypertrophy exerts in producing apoplexy, as well as softening of the brain. The attention of practitioners has been particularly called to this, by Le Gallois, Richerand, Briche-teau, Lallemand, and Bertin; and it is somewhat surprising to find a learned editor of the *Edinburgh Medical Journal*, informing us in 1828, that "*no pathologist has particularly examined those effects, to which the diseases of circulation give rise in the cerebral organ,*" appearing to claim this as a discovery of his own, as well as the making of incisions in whitloes! There never were individuals, who better understood the mystery "*of hanging great weights to small wires,*" than the editors of this *debilitated and puffing* periodical.

*Treatment.*—Whether the analogy between hypertrophy of the heart, and the muscles of the blacksmith's arm, be true in a pathological sense, or not, I could quote a number of cases in which it is supported by the result of medical treatment; viz. venesection, the strict antiphlogistic regimen, and perfect rest. Of all diseases of the heart, hypertrophy is that, in which the starving



treatment of Valsalva will, in general, be found most advantageous, even when complicated with some degree of dilatation.

The lancet is necessary, in those cases only, in which we are obliged to diminish plethora more quickly than can be done by diet and purgative medicines, and reduce the violent action of the heart, when danger is threatened to the head or lungs. It is necessary to keep the patient quiet, with respect to bodily and mental exertion, and to prevent him from speaking. Great benefit is frequently obtained from the occasional use of a weak solution of antimony, so as to produce a slight degree of nausea. He should sleep in a well-aired apartment, remote from every noise, and under as few bed-clothes as possible. With respect to his diet, it will be sufficient to say, that it ought to consist of biscuit or toasted bread, in such quantity as will barely keep soul and body together. The quantity of fluid should also be regulated, and must at once be considerably reduced. Should he complain of hunger, or be inclined to take liberties with himself, he may be readily enough controlled by two or three additional doses of antimony, which for that purpose should be given in different forms,—sometimes in solution, to which substances may be added to change the colour,—sometimes in powder,—and sometimes in the form of pill. If there be any pain in the region of the heart, the occasional application of leeches is advisable. The length of time necessary to persevere in the use of this restricted regimen, must entirely depend upon the severity of the symptoms, the nature of the disease, and the prospect we may have of being able ultimately to cure the affection. I have seen this plan beneficial within a few hours, particularly in two cases which have been lately under my care. The subject of one is a physician, whose complaints had been gradually stealing on for many months; his hair dropped out; he became emaciated; he felt considerable debility, with impaired appetite; his nights were restless; but I was not sent for till dyspnœa and oppression in the chest were so great as to threaten speedy death. I found the impulse of his heart very violent, probably the organ was in a state of hypertrophy, and he was threatened with hæmoptysis. After bleeding him to sufficient extent, he was put under the antimonial treatment, and starved; notwithstanding which, he began to increase in flesh and strength as soon as the antimony was omitted, and he had perseverance enough to live for a considerable time on two biscuits in the day, taking only as much fluid as was sufficient to enable his stomach to digest them. In the course of some time, he was allowed to take a little fruit, which disagreed with his stomach, produced indigestion, and flatulent distension, and occasioned a temporary return of the former symptoms, proving in a remarkable manner, the necessity of keeping the state of the stomach and bowels constantly in view, when treating diseases of the heart; and I so heartily coincide with the excellent remarks of Dr. Forbes on this subject, that I cannot forbear quoting his words. “One great principle (says he, note, p. 687,) is of paramount importance; it is the removal of all disorders in other organs, which can act as a source of irritation to the heart; I would here add,

that from its powerful influence (gastric irritation) in stimulating the organs of circulation to increased action, its previous cure becomes essential to the success of our measures for remedying the disease of the heart."

This gentleman gradually recovered, and in nine months was able to accept a medical appointment in India;—at the period of his departure he appeared in perfect health, had recovered his flesh and appetite,—he lived like other people, and there was no unusual impulse in the region of the heart. I received two letters from him after his arrival in Calcutta, but that happened which was to be apprehended. The excitement produced by the heat of the climate, and mode of living, soon made an impression upon his frame. He was obliged to leave India, and died on the homeward passage.

The other case to which I have alluded, occurred in the person of a gentleman who had been indisposed for six months; and although the case was complicated with dilatation, and perhaps disease of the valves, he felt the benefit of the treatment in a few hours, and enjoyed sound sleep that very night, for the first time since his illness. He increased in strength and flesh; the impulse of the heart daily declined; the agony which he felt in the chest, and outwards to the arms, ceased; cough, dyspnœa, and expectoration, with which he had been affected from the commencement of his illness, disappeared after the third day from the beginning of the treatment. This gentleman was able in the course of a few months to undertake a long journey to the south-west of England. This he performed without inconvenience. He was distinctly told, however, that he could not be completely cured, but might expect to be greatly relieved, and his life preserved for many years, provided he attended to his diet, and used proper precautions. Soon after his arrival in England, he fell under the care of one of those medical men who practice by routine, who have no pathological knowledge, but are never at a loss to give a name and local habitation to every disease that comes before them, who have a nostrum to cure every symptom, and who furnish their patients with eighteen draughts, three dinner pills, and a red mixture for three days consumption!! Upon a first visit, he denounced the opinion of the "Scotch doctor," and declared that the patient's only complaint was "bile." He removed all my restrictions, told the patient to move about, to walk up the hills, which would open his chest, and to eat beef-steaks, and drink porter. All this was mighty pleasant news to the poor patient, who was very fond of the pleasures of the table. But he was in the first place put under a course of mercury, during which he was confined to the house on account of the severity of the weather. Under this treatment considerable amendment took place, and the most positive assurances were given of a speedy and a permanent cure. The most flattering accounts were received by the patient's friends in Scotland, who are people in the highest class of society; but my invariable answer was, that the amendment could not be permanent. Some months passed over, and still favourable reports were made. At length, having occasion to be in London on business, my desire to see the patient was so great, that I undertook two long days' journey solely for that purpose. On my

arrival at his house, (at half-past ten o'clock at night,) I found he was out at supper. When he came home, he said he was pretty well, but felt the "old sensation always in his chest." On applying my ear to the thorax, I perceived a strong throbbing impulse over every part, with a loud rushing or blowing sound. It was a painful duty to be obliged to open the eyes of his affectionate wife to the dangerous state of her husband's health, and the uncertainty of his surviving even a week. Fortunately for her future peace of mind, she believed me; and to shorten a long story, he died in less than three months. The correctness of my opinion was afterwards ascertained, and admitted by all parties.

By degrees, we are to allow the patient to return to an animal diet, which is bitter, when used in moderate quantity, than having his stomach filled with farinaceous food; and in order to prevent either a wilful or an accidental error, the exact quantity of food allowed in twenty-four hours, should be given by weight, and liquids by measure.

The antimony ointment is to be rubbed over the region of the heart, and irritation on the surface should be supported for a few weeks, every now and then, while the cure is going on. I think it best not to have recourse to it, however, till such time as the restrictions of diet are to be a little relaxed.

## CHAP. V.

### DILATATION OF THE HEART.

---

DILATATION of the heart consists in an enlargement of the capacity of one or more of its cavities. Dilatation, complicated with hypertrophy, has already been described. In the morbid alteration now to be mentioned, the walls are much thinner than natural, commonly conjoined with a degree of softening of the muscular substance, and some change in the colour, which is either more purple, or paler than natural. This disease is the "*passive aneurism*" of Corvisart. According to Bertin, who has written a valuable work on diseases of the heart, there are three forms of dilatation :—1<sup>st</sup>, Dilatation with the thickening of the walls of the heart, which has already been treated of, under the title "Hypertrophy ;"—2<sup>d</sup>, Dilatation with thinness of the walls ;—and 3<sup>d</sup>, Dilatation without any change in the walls. Bertin has truly observed, that the orifices of the heart frequently partake of the dilatation of the cavities, insomuch that the valves become insufficient to close them.

Dilatation is sometimes confined to one ventricle, though it more commonly affects both. The heart is more dilated in breadth than in length, and therefore assumes more of a rounded form than natural.

The causes of this disease are ascribed by Bertin to some obstacle in the course of the blood, such as disease of the valves : this must be admitted ; but probably the most frequent cause is, as stated by Laennec, a congenital disproportion in the parts of the heart. In some cases, the *foramen ovale* is found open to a considerable extent.

*Symptoms.*—Patients affected with dilatation, are more liable to sudden attacks of palpitation and dyspnœa, on any violent emotion, than those with hypertrophy ; the pulse is commonly soft, weak, and undulating. Weak action of the heart, whether owing to dilatation or not, frequently produces alarming symptoms, such as vertigo, loss of memory, syncope ; together with nausea, vomiting, and constipation.

J. M. aged 29, a medical student, very tall, stooping in his gait, of a fair complexion and light hair, had been affected for about a year with symptoms which he attributed to disorder of the stomach. He complained of a feeling of distension and weight in the epigastrium. Occasionally, he was troubled



with a short, dry cough, and palpitation of the heart, excited generally by any sudden or unusual exertion. The pulse was naturally slow and full.

These symptoms gradually became more constant and troublesome. In July and August 1823, he had occasion to exert himself considerably in his professional pursuits, and the feeling of uneasiness in the epigastrium, and palpitation at the heart, proportionally increased, but appeared to him to be constantly relieved, when his bowels, which were generally costive, became relaxed by the use of medicine.

In September, his complaints were much aggravated; towards evening, the short, tickling cough, became exceedingly troublesome, and, when he placed himself in the recumbent posture, he was frequently seized with feelings of suffocation, which forced him to sit up. The difficulty of breathing, accompanied by a sensation of constriction in the breast, was at times considerable; and the paroxysms which seized him during the night, he compared to asthmatic fits. He was frequently obliged to rise during the night; and when he did sleep, was often suddenly awakened by a sense of suffocation. Towards morning, he became easier, and enjoyed some rest. During the day, he was comparatively well. He was thin and pale, but complained little, except of want of rest. He went about his medical studies with ardour and assiduity; but on making any unusual exertion, he was immediately seized with a short cough, and, on mounting a flight of steps, or an ascent of any kind, he was often obliged to stop suddenly. On walking quickly, his strength failed, and he complained that his limbs refused to perform their office. On examining the pulsation of the heart at this period, it appeared to be placed immediately under the hand; instead of the usual quick and hard stroke, a prolonged pulsatory throb was distinguishable, extending over a larger than usual surface. To the stethoscope, both the left auricle and ventricle gave a clear sharp sound, distinctly observable, also, under the clavicle of the right side.

In October and November, he became gradually worse. The paroxysms at night were more frequent and more troublesome; and he was generally obliged to sleep in the sitting posture. He sometimes, however, passed days and nights pretty comfortably, and he believed that this was principally the case when his bowels were freely opened.

In December, the oppression and sense of fulness in the epigastrium increased to so great a degree, as to render the slightest pressure on the part insufferable. The veins of the neck were observed, at this time, to be full, and a strong pulsatory motion was given to them above the clavicle. He still continued his studies with ardour, and refused to confine himself; but on mounting stairs, or walking quicker than usual, he became completely exhausted, and was often obliged to rest himself. On the 12th December, he felt much worse, and weaker. On the 14th, a material change for the worse had taken place; his face was pale and anxious, the lips blueish, and the ancles œdematous;—still he conversed cheerfully, and without the least alarm. The pulse was small, and about 120. On applying the hand to the region of the heart, the usual

quick, hard beat, was not to be felt; but there was a kind of violent pulsatory struggle perceptible over a considerable space. A physician saw him, and the medicines he recommended were employed with great apparent benefit. Mr. M. thought himself better;—the œdema of the legs disappeared, and the cough became less troublesome;—the palpitation at the heart had subsided; and he complained only of a sense of weight in the epigastrium. During the day, he was tolerably well, but about ten at night, he became hot and exceedingly restless, continually shifting his posture in the vain hope of repose. This continued for some hours, when he generally sunk into a slumber, and continued till morning, bathed in a copious perspiration. On Friday, 26th, he was much worse. At 4 P. M. he was sitting up and conversing cheerfully; but his legs were more swollen; his pulse irregular; the pulsations of the heart could not be felt in the usual place, and an undulatory pulsatory feel was communicated to the hand, when placed on the epigastrium. About 8 o'clock, his breathing became oppressed, he sunk into slumber, and died without a struggle.

The body was examined about sixty hours after death. A great quantity of bloody serum seemed to have escaped, and still continued to flow from the mouth and nostrils. The body was much swollen, and the cellular membrane was distended with air; a quantity of serum flowed out on making the several incisions. About a pound and a half of bloody serum was found in each cavity of the thorax. The pericardium contained about three ounces of fluid. The heart was more than three times its usual size. It was of a deep brown colour, and destitute of fat. On examination, the right auricle was greatly increased in capacity, and extremely thin in its walls. The *foramen ovale* was sufficiently open to admit the point of the little finger into the left auricle. The right ventricle was nearly natural, as was also the left auricle. The left ventricle was of an enormous magnitude, and more resembled a large bag than a ventricle of the heart. It was more than three times its natural size, its walls of extreme thinness, and the fleshy columns widely separated from each other. The lungs were more than usually congested with blood; but they, as well as the viscera of the abdomen, were perfectly healthy.

The above case is interesting in many respects, and among others, in having the *foramen ovale* open, which was, in all probability, produced by the enormous dilatation of the right auricle; it is worthy of remark, that the communication between the right and left auricle existed without producing the diseases termed cyanosis or blue skin.

*Signs of dilatation.*—The only certain sign is the clear sound of the heart with deficient impulse. Laennec says, the degree of distinctness of the sound, and its extent over the chest, are the measure of the dilatation; thus, when the sound of the contraction of the ventricles is as clear as that of the contraction of the auricles, and if it be at the same time perceptible on the right side of the back, the dilatation must be extreme.

*Signs of dilatation of the left ventricle.*—A clear and sonorous contraction, between the fifth and seventh ribs of the left side.

*Signs of dilatation of the right ventricle.*—The sound is heard somewhat better towards the bottom of the sternum, than in the region of the heart; to which may be added, in the language of Corvisart, a “greater degree of oppression, more marked serous diathesis, more frequent hæmoptysis, and a more livid state of the countenance,” than in affections of the left ventricle.

According to Laennec, the most constant and characteristic of the equivocal signs of this affection, is, an habitually swollen state of the jugular veins without pulsation.

The following statements are extracted from the work of Senac, (*Traité de Cœur*, tom. 2.)—“*Il est certain que les dilatations des diverse cavités (du cœur) peuvent être distinguées. En général les battements du cœur ne sont pas violents quand le ventricule droit, ou le sac de ce ventricule, sont extrêmement dilatés; à peine les dilatations produisent elles des palpitations; dans beaucoup de cas, les malades, sentent seulement un grand poids dans la région du cœur,*” page 327. And again, “*Les dilatations du ventricule droit et de son oreillette produisent toujours des battements dans les veines du col—*” “*L’absence de ces battements, lorsqu’une dilatation du cœur est constatée, établit cette dilatation dans le ventricule gauche, &c.*” Page 328.

My attention has been frequently attracted to dilatation of the auricles, since the publication of the first edition. In several instances, the auricles, instead of forming a small part of the whole organ, were of equal size with the ventricles; in others, the proportions between auricles and ventricles were reversed—the former being by far the largest part of the heart. I have occasionally found the walls of the auricles much thickened, not only with respect to the muscular structure, but the lining membrane also. In a healthy heart, the lining membrane of the auricles is considerably thicker and stronger than that of the ventricles; but in the condition of which I am now treating, the contrast is most remarkable.

In concluding this part of the subject, it may be observed, that we have frequently combinations of different diseased states; thus we occasionally meet with dilatation of one ventricle, and hypertrophy of the other; but the comparative exploration of the two sides of the heart will enable us, after some practice with the stethoscope, to detect this. In other cases, we have dilatation of one ventricle and the opposite auricle. We also meet with cases in which the parieties of the dilated cavity are thickened in certain points of their extent,—thinned in others,—and in the remaining parts exhibiting their natural structure.

#### TUBERCULOUS AND OSSIFIC FORMATION IN THE SUBSTANCE OF THE HEART.

VARIOUS kinds of accidental productions have been found in the substance of the heart. I shall merely mention the enormous collections of fat which have been discovered about the pericardium and heart, because I have seen this condition frequently in subjects who have died of other diseases, and in whom no affection of the heart had been suspected; at the same time, there



are cases on record, in which the muscular structure was so much weakened, and the fibres so much separated by the interposition of fat, that it has appeared to be the cause of impeded action, and occasionally of rupture of the organ.

Ossific depositions in the walls of the heart are avowedly rare. Laennec met with two instances of this formation between the layers of the pericardium; the history of one of the cases, along with the dissection, (at p. 670, of the translation,) is well worthy of perusal. Baillie notices instances of this nature; one case fell under his own observation, in which the ossification had spread over a considerable portion of the pericardium, (p. 13.) He also says, (at p. 49,) "When a part of the heart is converted into an earthy matter or bone, no morbid symptoms whatever have in some cases been observed; and in others, there has been palpitation of the heart, with difficulty of breathing." But the author does not say that he had ever seen such cases.

I have seen one instance only of tubercular formation in the substance of the heart; Laennec states that he has seen it three or four times. In the year 1826, some of my pupils were called upon to examine the body of a young woman, who dropped down dead without any previous indisposition. No diseased appearance was found any where but in the heart. On opening the pericardium, it was observed to contain a little serum. The surface of the heart was vascular, and there was some watery effusion beneath the serous membrane at several points. There were also two considerable projections, the largest at the apex of the heart, the other about the centre of the left ventricle; on making incisions at these parts, tuberculous masses were found occupying the whole thickness of the organ, of a soft cheesy consistence, at the apex, to the extent of an inch and a half in diameter, and at the left ventricle to that of an inch.

Upon inquiry, it was found that this individual had led a very irregular life, but had always enjoyed a good state of health.

#### ATROPHY OF THE HEART.

DIMINUTION of size is mentioned by most authors who have written upon diseases of the heart. Laennec states, that the "heart, like the muscles of voluntary motion, is clearly susceptible of diminution of size." The hearts of individuals who die of phthisis, are certainly uncommonly small; Laennec says, that he has thought he "could recognize a sort of withering of the organ indicative of its loss of volume." On examining the body of a young woman, who died from the effects of a tumour, weighing above fifty pounds, which grew from the fundus of the uterus, and extended upwards, encroaching so much upon the thorax, that the diaphragm on the right side was pushed up as high as the first rib, the heart was found little above half its usual size, and was very much flattened by the pressure of the tumour. Its action had been so much impeded, that the pulse could be scarcely felt in any artery of the body for a considerable time before death. I have another heart in my possession, taken from



an adult male, which is not larger than that of a child of six years old. Both coronary arteries were found much ossified. In this case there could be no doubt, that the small size of the heart depended upon the diminution of the nutritive process; the pulse at the wrist was exceedingly small for five or six months previously to death, and during the two last months, it was so weak that it could scarcely be counted. Laennec says, that he has never observed any symptom peculiar to atrophy of the heart. "I may remark, however, (he adds,) that several hypochondriacs, who are liable to faintings from very slight causes, gave, under the stethoscope, signs of a very small heart; and we know, moreover, that women, who are much more liable to these attacks than men, have in general smaller hearts." (Page 614.)

#### RUPTURE OF THE HEART.

WE are assured by those who have had the best means of knowing, that this accident is very rare. Laennec thinks that these ruptures are generally produced by previous ulceration of the ventricular parietes, and Bertin is of the same opinion. Laennec states, that it is surprising rupture of the heart does not more frequently happen in those cases of great accumulation of fat, reducing the walls of the ventricles to extreme thinness. According to Meckel, rupture of the heart most frequently takes place at the point of junction between the aorta and left ventricle; but this does not seem to accord with the observations of others. Bayle assures us, that in nineteen cases of rupture of the heart, fourteen took place in the left ventricle, principally on its anterior side near the apex; three in the right ventricle. In most of the subjects, the heart was remarkably soft, and the substance around the perforation was of a brown colour. Baillie's observations upon this subject are very vague, and not worthy of quotation. I have seen two cases of sudden death, in which the pericardium was found to contain a large quantity of coagulated blood. In one of these, the perforation through which the blood had issued, could not be discovered for some time, and when on the point of giving up the examination, a small rent, just capable of admitting the head of a pin, was found at the root of the aorta, which vessel was somewhat dilated, and its texture injured by incipient ossification. The subject of the other case was a woman about fifty years of age, who had previously enjoyed a good state of health. The night before her death, she had walked from the south-west extremity of the Old Town of Edinburgh to Newhaven, and back again, a distance of about six miles, and had gone to bed without making any complaint. After a good night's rest, she got up in the morning, and fell down dead soon afterwards, whilst cleaning her shoes. On dissection, the pericardium was found greatly distended with coagulated blood; the aorta, much injured by ossification, was seen greatly dilated near its origin, where a small rupture existed, not above two lines in length.

Bertin mentions two instances of rupture of the auricles, which is more rare than that of the ventricles; in one of these, the rupture was produced by a

fall ; in the other, it occurred without any perceptible cause, and the heart was enormously loaded with fat.

We are assured by Laennec, that rupture of the auricles, ventricles, and large vessels within the pericardium, is not always followed by sudden death. In several cases, the blood accumulated in the pericardium formed a solid coagulum, and checked for a time the hæmorrhage.

## CHAP. VI.

### DISEASES OF THE VALVES.

---

THE valves of the heart are liable to depositions of fleshy, cartilaginous, and osseous matter, which increase their thickness, alter their shape, and obstruct the orifices in which they are placed. They are sometimes so much altered in structure, as to be unfit to perform their chief function, viz. to prevent the regurgitation of the blood. The valves at the origin of the pulmonary artery, have a remarkable immunity from these diseases, while they are frequently met with in those at the aorta. The mitral valves are perhaps more frequently found diseased than the tri-cuspid.

*Appearances on dissection.*—Sometimes the points only of the semi-lunar valves are affected; at others, their bases; when they are affected throughout, they are deformed, and often coiled upon themselves; and when in this condition, they have frequently a red fleshy-looking appearance, smooth, and polished. Very often a small cartilaginous concretion is observed in the points of the semi-lunar valves, which may be considered as enlarged corpora sesamoidea, but which can scarcely impede the circulation, until they become of considerable size. Sometimes these valves seem, as it were, to be encrusted with osseous matter; and I have seen instances, in which it was impossible to trace the inner membrane over the osseous projections. We sometimes find small fleshy vegetations resembling warts.

The cartilaginous induration of the auriculo-ventricular valves, is sometimes confined to the fibrous bands found in its base. In this case, it has the appearance of a very smooth, though unequal ring, diminishing the size of the orifice; it is sometimes of a semi-cartilaginous consistence; at others, it is formed of perfect cartilage. The same kind of appearances are occasionally met with in other parts of these valves, but those situated at the bases and points are usually the thickest.

The osseous productions are found in the same situations, and are very unequal as to thickness. Like those already described in the semi-lunar valves of the aorta, they are often found projecting from the valve, denuded, and very rough. We are assured by Laennec, that they are not perfect bone, being whiter, more opaque, more fragile, evidently containing a greater proportion of phosphate of lime. They are sometimes situated on the free margins of this

valve, diminishing greatly the size of the orifice ; indeed, sometimes to so great an extent, as scarcely to admit the blade of a pen-knife, of which there are examples in my museum. Sometimes, though rarely, the tendinous chords of the mitral valve are affected in a similar manner. In one case, Dr. Forbes found three of the pillars of the mitral valve completely ossified through their whole extent, with the exception of a minute portion at each extremity.—(Original Cases, page 133.)

The auriculo-ventricular valves are likewise found studded with fleshy excrescences like warts ; they are in general soft, and with difficulty preserved.

When ossification is confined to the free margins of the sigmoid valves, or when the base is affected, if still slightly thickened, the valve may perform its functions provided the middle portion be still sound ; but when the disease is extensive, the valves, according to Laennec, grow together, and get incurvated either towards their concave or convex side, in which state they are immovable, being either fixed on the side of the aorta, or in the orifice of the ventricle.

*Symptoms.*—These are palpitations and dyspnœa, often to such a degree, as to be called asthma ; both these symptoms are increased by quick exercise, or any unusual exertion or emotion. When the disorganization advances to a certain pitch, the palpitation and dyspnœa increase in frequency and violence ; the pulse is weak, small, and thready, and occasionally intermits, which corresponds with intermissions in the contractions of the heart ; the feet are observed to become œdematous towards evening. At last, the symptoms denoting impeded circulation augment, the face and extremities become discoloured, the œdema extends to the legs, dropsical effusions take place into the different cavities, and the dyspnœa increases to such a degree, that the patient is obliged to remain in a sitting posture, or bent upon the edge of the bed, in a kneeling position.

According to Laennec, the following stethoscopic signs are observed. “The symptoms of ossification of the mitral valve, are little different from those attending the same affection of the sigmoid. According to M. Corvisart, the principal sign of the former lesion is ‘a peculiar rustling sensation, (*bruissement*) perceived on the application of the hand to the region of the heart.’ This peculiar sensation is nothing else than the *purring thrill* already described. It is assuredly very frequently observed in the case of ossification of the mitral or sigmoid valves, when this exists in a high degree ; but, as I formerly stated, it may exist when these valves are perfectly sound, and it is almost always absent when the induration is not so extensive as materially to obstruct the orifices. The bellows sound is a much more constant sign ; it accompanies the contraction of the left auricle, when the mitral valve is affected, and that of the ventricle, when the induration is in the sigmoid. But even this is wanting when the alteration is not extensive, and as it is, moreover, very common when the heart is perfectly sound, we must lay no stress upon it as a sign, unless it be combined with other circumstances calculated to confirm the diagnosis. Accordingly, when the sound of the bellows, rasp, or file, persists in the left auricle, either continuously or interruptedly, for several months ; when it is found only



then, and exists even in the greatest quietude; when it is scarcely lessened by venesection, or when lessened, if it still leave behind it a degree of roughness in the sound of the auricle,—or, yet more, when the purring thrill co-exists with this, we may be assured that the auriculo-ventricular opening is contracted. If the same phenomenon occur, under similar circumstances, in the left ventricle, we may be equally certain that the aortal orifice is contracted.” Three or four times, during the last four years, I have discovered this lesion by means of these signs. Three similar examples, equally verified by dissection, are recorded in M. Bertin’s work, (Obs. 49, 50, 51;) and a fourth is given in the collection of cases published by Dr. Forbes, (Case vii.) “But (continues Laennec,) if these phenomena exist only for a time, although as much as two or three months; if they accompany the increase of any other nervous or organic disease of the heart, we must not depend upon them as indications of the lesions now in question, since all the facts formerly recounted, prove that these sounds are not produced (as might be imagined at first) by the passage of the blood over a rough or rugged surface, but to the spasmodic energy requisite in the muscular contraction, to overcome the obstacles opposed to it. It follows, therefore, that any other cause besides diminution of the orifices, which occasions contraction of the heart, is equally capable of giving occasion to the bellows sound, and purring thrill; and it is fair to admit, that in the first edition of this work, I laid too much stress upon these two phenomena, as signs of the valvular disease. A slight degree of cartilaginous or bony induration of the valves, may exist for a long time without any visible alteration of the heart; or even by proper measures of precaution, and by seasonable bleedings, we may frequently preserve for a long time the life of individuals, who present every sign of considerable contraction of the orifices.”—(Forbes’ Translation, page 634.)

I conceive that Laennec laid too much stress upon the effects of nervous affections of the heart, and in the latter period of his life he became timid and doubtful with respect to his own powers of observation, which enables us to account for the tenor of the above quotation. I believe, however, that these sounds, and more particularly the blowing or rushing sound, may be occasioned by a large quantity of blood rushing with violence through the orifices, even when the valves are sound.

Within these few years, several cases of sudden death have taken place, even in young persons, and the only morbid appearance discovered upon dissection, was disease of the valvular apparatus.

*Treatment.*—A similar treatment to that formerly recommended in other diseases of the heart is necessary; viz., to reduce and obviate plethora, to enjoin rest, to avoid every cause which can increase the quantity of blood, and hurry the circulation; and lastly, to moderate violent symptoms by applying leeches, producing counter-irritation, and administering an occasional opiate.

## CHAP. VII.

### DISEASES OF THE BLOOD-VESSELS.

---

THE first disease of this class which I shall notice, is inflammation of the internal membrane of the heart, and large vessels near it. There can be no doubt that this disease does take place occasionally, from the circumstance, that ulceration and false membrane have been found in various places; but it must be a very rare disease. Bertin, however, has written to prove that it is a common affection. The lining membrane of the heart, and of the large blood-vessels, is sometimes found of a brown or violet colour, and also a bright scarlet. It is a subject of controversy at this moment, whether this colouring is the effect of disease, or of imbibition of blood after death. From my own observations, I am led to conclude, that it is sometimes from the one cause, and sometimes from the other; and I think our conclusions must depend upon three circumstances. *1st*, Whether any blood is found near the discoloured portion? *2dly*, Does blood found in the aorta, always impart a colour to its lining membrane? *3dly*, Upon the texture of the part so affected. I have frequently found the aorta of a red, brown, or violet colour, when neither it nor the left ventricle contained any blood; and on the contrary, I have seen the aorta almost filled with blood, partly fluid, partly coagulated, when the inner membrane presented its usual straw colour. When the aorta was discoloured, I have occasionally found the inner membrane soft and pulpy, and readily removed with the fingers; and I scarcely remember to have seen incipient ossification of the aorta, without observing a vivid redness of its internal membrane. This subject ought to be held as being open to future investigation. The next point which has attracted the attention of pathologists, is the exudation of coagulable lymph. It is stated, that this has actually been found; Burns, for instance, distinctly describes it; Laennec says, that he has observed false membranes of small extent, strongly attached to the walls of the auricles; I cannot say that I have ever observed this appearance. The next subject worthy of attention is ulceration. Laennec seems very much inclined to doubt the existence of ulcerations in this delicate membrane; he supposes the parts left by the separation of the bony incrustations of the aorta, to have been mistaken for ulceration; he states, however, that small pustules have been sometimes met with beneath the inner membrane of the aorta, and which have discharged their contents into its

cavity; and he asserts, that it is probable that what are called ulcers of the aorta, are formed in this manner, being the consequence of inflammation of the middle coat of the arteries, or of the fine cellular substance which unites this to the inner coat. In quoting these statements, I have to remark, that Laennec appears to be determined not to admit that inflammation of these parts can exist, and that he has manifested too much of the spirit of a special pleader. The last point which some individuals suppose indicative of inflammation of the inner membrane of the heart and blood-vessels, is the formation of concretions, well known by the name *polypi*. One set of pathologists maintains, that they are the result of previous inflammatory action, which another denies. It is a most interesting question in pathology, and therefore deserves minute investigation.

Since the publication of the first edition, a dissection has taken place in Edinburgh, which sets this question at rest for ever,—an osseous concretion having been found in the right auricle. I am well aware that polypi, which have been termed "*organized*," have been frequently observed, and that injections have been thrown into the vessels; but doubts have been entertained on the subject, and the appearance of vascularity has been variously accounted for. The following is a short sketch of the case in question, and the appearances on dissection:—A young woman of amiable disposition, and regular, industrious habits, died after several years' illness. I was requested to visit her some years before her death; she was then labouring under cough, quick and anxious breathing, palpitation, emaciation, and hectic fever. One or both lower extremities were affected in a similar manner to that observed in phlegmasia dolens. Her appearance was so unpromising, that I thought she could not long survive; but she rallied, and for a time became better, but soon relapsed again; in fact she became better and worse at times, occasionally much distressed with dyspnœa, cough, pain and distention of the lower extremities, and febrile symptoms. It was thought that her lungs were affected, as the sound of respiration during a severe paroxysm was not audible in some parts of the chest. This opinion was subsequently abandoned, when it was supposed that the functions of the lungs were embarrassed in consequence of some impediment in the circulation. The action of the heart appeared natural, but the sounds and impulse were weak. There was no irregularity of pulse. Nothing afforded her any relief but venesection; and during her illness, she was bled above one hundred times. The uneasiness produced by the tense and swollen condition of the lower extremities, was greatly eased by repeated punctures, when a large quantity of serous fluid was discharged.

*On dissection.*—The lungs were somewhat œdematous, but appeared otherwise sound. The heart did not appear to be above the natural size; the right auricle was found almost filled by a large hard mass, which adhered by a broad margin to the superior part of the auricle, while its inferior portion projected into the corresponding ventricle; it was tightly held in this position by the tri-cuspid valve. The superior and inferior portions of this mass were con-

verted into osseous matter, and felt hard to the touch. The centre part was in appearance like a hardened coagulum of blood; and when the preparation was recent, there were thin ossific scales seen running in a longitudinal direction every where over the surface. In the same auricle, there were three other, but smaller masses. One was like a coagulum of blood, and adhered to the superior part of the auricle, between the orifices of the pulmonary artery and superior cava; another was small and carneous, attached to about the centre of the auricle, but which was broken off, and lost during maceration; its base, however, is still to be seen in the preparation;—the third mass has not been examined. It lies deep in the auricle below the large ossified polypus, and we were fearful of destroying the attachments of the latter to the heart. The inguinal veins and the vena cava were found distended with hard coagulated blood; on minute examination the coats were found in a healthy state, perhaps somewhat thickened, but the contents adhered firmly to the sides of the vessels. In some parts, particularly on the right side, the contents of the veins were organized, completely obliterating the vessels.

It does not appear that this condition of the lining membrane of the heart and arteries is indicated by any particular symptoms, although some assert that it is the cause of inflammatory fever.

#### OSSIFICATION OF THE ARTERIES.

THE morbid condition which goes by this name, belongs to the class of imperfect ossifications. These seem to be produced in two ways; 1st, By soft cartilaginous depositions, which are gradually converted into ossifications, by the deposition of small calcareous spots, which gradually extend. 2dly, By the deposition of a soft powdery substance between the inner and middle coats, without any cartilaginous formation; this substance becomes gradually converted into ossific incrustations. Occasionally, ossified spots are found only here and there, although sometimes the whole vessel is affected. Some pathologists imagine, that this formation is not connected with inflammation,—this appears to be Laennec's opinion; others maintain, that it is the consequence of inflammation. After careful observation, I have seen reason to embrace this last mentioned opinion, from remarking the state of parts in the incipient stage of the disease. It is now well ascertained, that these depositions are formed in the cellular substance, between the inner and muscular coats. In the latter stages, the inner membrane in many parts is removed, exposing the bare ossified surface; but a very superficial examination in the early stages, will shew the proper seat of this formation to be as above described. This formation is frequently the cause of aneurism. All arteries do not seem equally disposed to take on this diseased action. The aorta, at its origin from the heart, is most frequently found affected, then the arch, and the descending aorta, the disease attacking the angles at which the vessels branch off, in preference to other parts. The arteries of the brain are very frequently found diseased in cases of apoplexy; I have seen the most minute vessel that



could be traced in the brain, in this condition ; and on one occasion, the circulation on one side of the circle of Willis was completely obstructed from the ossification of the vessel. The arteries of the superior extremities would seem to enjoy a singular immunity, whilst those of the lower extremities are often affected. Ossification of the blood-vessels must influence the functions of various organs. I possess a beautiful preparation, shewing its effects upon the kidney,—one emulgent being almost destroyed by ossification, the corresponding kidney is in a state of atrophy.

## ANEURISM.

THERE is no disease which shews the absurdity of the division of medicine into physic and surgery, more than this. When an aneurism is within reach of the knife, then it is called a surgical case ; if otherwise, it is handed over to the physician. All writers describe aneurisms of two kinds,—the true and the false. I can join Laennec in stating, that “true aneurism of the ascending portion and arch of the aorta is very common.” I have seen it more frequently in such a situation than the false aneurism ; indeed, Laennec is of opinion, that false aneurism of the ascending aorta, or its arch, rarely, if ever, exists, unless formed by a rupture of the inner coat of a true aneurism, after it has acquired a certain size ; at least, he states that he had never met with any other species of false aneurism in that situation, but that consequent to the true or simple dilatation of the part. The abdominal aorta is also the seat of aneurism ; and the arteries of the brain are not exempt. Aneurisms of the aorta exist in various degrees, from slight dilatation, up to the size of the head of a full grown fœtus. The vessel is found in one of three states :—1st, The walls more or less converted into ossific matter, looking scabrous and irregular, portions being easily separated in scales ; in many instances, these scales are found loose, and already more or less detached :—2d, That in which the whole of the coats of the aneurism are entire, much thickened, and cut under the knife like fibro-cartilage, having very much the same appearance :—3d, That in which a portion of the aneurismal sac is entirely wanting, in consequence of long continued pressure on surrounding parts ; so that sometimes a portion of the lungs, and even the spine itself, has formed a part of the aneurismal tumour.

Aneurisms of the aorta produce various effects on the neighbouring parts, according to their size and situation. Laennec assures us, that simple dilatation, when in a moderate degree, hardly produces any effect ; but that the most inconsiderable false aneurisms may give rise to very serious disorder. The first and most common of these effects, is compression of the heart and lungs, by impeding the circulation and respiration. When the aneurism is in contact with the lungs, it most commonly merely compresses them ; sometimes, however, the substance of these organs gives way, and the aneurism, when it bursts, pours its blood directly into the air-cells ; three remarkable cases of which I have already related when treating of hæmoptysis, (page 309.) Frequently the aneurism compresses the trachea or one of the bronchial trunks, which it flat-

tens and eventually destroys, and death ensues by a species of hæmoptysis from the rupture of the tumour. The same occasionally, but not so frequently, happens to the œsophagus. Sometimes the aneurism bursts into the pericardium; two cases of this are also quoted, (page 372.) Laennec states, that he never met with an example of it. The left cavity of the pleura, however, is stated to be by far the most frequent situation into which the rupture takes place. Laennec quotes a case recorded in the *Bulletin de la Faculté de Médecine*, in which an aneurism of the aorta burst into the pulmonary artery. He mentions a case where the thoracic duct was compressed and destroyed; and Corvisart notices a fatal instance from compression of the superior vena cava. I have seen a preparation of aneurism of the abdominal aorta, which communicated freely with the vena cava. Aneurisms often destroy a large portion of the vertebral column, and there can be no doubt that this destruction is the effect of the interstitial absorption, not of caries. On the side next the vertebræ, the sac is occasionally completely destroyed, and, to use the words of Laennec,—“the circulating blood is bounded by the naked bone.” Several instances of which occurred in my practice.

Aneurisms of the ascending aorta and arch, sometimes destroy portions of the sternum by their pressure, so as to be at length covered only by the integuments. Aneurisms of the arch of the aorta, and of the innominata, occasionally project above the sternum.

There is no complaint more insidious than the one under consideration; and many a sufferer has been supposed to be nervous, or hypochondriacal and fanciful, who was found, upon dissection, to have been effected with ossification of the arteries, or perhaps an internal aneurism. Laennec states, that aneurisms of the aorta cannot be detected till they shew themselves externally, and often the first indication of such an affection is the instantaneous death of the individual, from the effusion of blood into surrounding parts. The symptoms which are sometimes observed, are, oppression in the chest, dissimilarity of the pulse at the wrists; a loud whizzing or rushing at the top of the sternum, perceptible to the hand; obscure sound on percussion; rattling in the throat; and dragging down of the larynx, when the tumour compresses the trachea. In noticing these symptoms, he observes:—“In the present state of our knowledge, there assuredly exists no certain means of ascertaining the existence of this disease, until it shews itself externally. Even when the aneurismal tumour has made its way through the parietes of the chest, it is not always distinguishable from tumours of the different kind.” And in another place, he distinctly asserts that his experience has been insufficient to enable him to say how far the difficulty of diagnosis is likely to be removed by the use of the stethoscope.” From my limited experience on this subject, it behoves me to speak with very great diffidence; but the little knowledge I do possess, induces me to join M. Bertin, who conceives that Laennec has undervalued the stethoscope in detecting aneurisms of the aorta.

Besides the symptoms above described, they must vary considerably accord-

ing to the size, shape, and situation of the aneurismal tumour. It may press upon the spine, and occasion violent pain in the back, with weakness and anomalous nervous affections; it may press upon a principal bronchial tube, and create dyspnœa, or produce, by pressure, absorption of a portion of the lungs, and occasion dyspnœa, cough, and even hæmorrhage. Or it may compress the œsophagus, and produce difficulty in swallowing. All these circumstances are well illustrated by dried preparations in my museum.

*Stethoscopic signs.*—Strong beatings synchronous with the pulse; in general, a single pulsation is felt, which Laennec terms “simple,” in contra-distinction to the pulsation of the heart which is double. There is a greater impulse, and a louder sound, than the mere contraction of the ventricles produce. The single pulsation is generally accompanied by the bellows sound, “*bruit de soufflet*,” these vary in situation, according to the site of the tumour. If the aneurism press upon the air-passages, a peculiar hissing sound will also be observed during the act of respiration or speaking. When the tumour is large, the chest at that part will sound dull upon percussion, and sometimes even the hand placed upon the part, will convey a vibrating sensation to the observer. Still, however, we must be cautious in pronouncing a diagnosis, as I have lately seen several cases, in which, from other causes, one pulsation only was heard; which appears to me to be produced by the long-continued action of one set of cavities, masking the sound of the other. Laennec speaks very confidently with respect to one point, which shall be given in his own words:—“If we find under the sternum, or below the right clavicle, the impulse of the circulatory organ, isochronous with the pulse, and preceptibly greater than that of the ventricles examined in the region of the heart, we have reason to suspect dilatation of the ascending aorta, or arch,—the more so, as it is extremely rare to feel the impulses of the organ of circulation beyond the region of the heart, even in cases of the most marked hypertrophy. If this phenomenon be found constant, after repeated examinations, we may consider the diagnosis as certain.” Ber-  
tin, in his work on diseases of the heart, states, that it is not by the pulsations that an aneurismal tumour is to be detected, but by the great noise which accompanies them.

*Treatment.*—It is very difficult to give any general directions for the treatment of internal aneurism, further than that quietness of body and mind should be enjoined, together with attention to the bowels; and to recommend a light and rather dry spare diet. If there be signs of plethora, it should be diminished by a moderate bleeding; if there be any local pain, we are to consider, whether it will be most advisable to subdue it by the application of leeches, a counter-irritant, or by the exhibition of an opiate. From the situation of an aneurism of the aorta, and its connection with neighbouring parts, we see at once, how the functions of the lungs may be impeded by mechanical pressure, independent entirely of the obstruction in the circulation;—how the brain may be affected by impeding the return of blood from the head;—and, also, how deglutition may be rendered difficult and even painful.

## INFLAMMATION OF VEINS.

It would appear that we are, as yet, very much in the dark respecting the functions which the venous system performs, independently of returning the blood to the heart; and I feel convinced that we have no idea of the large share which inflammation of arteries and veins has, and particularly the latter, in different acute and chronic diseases. Many surgeons have yet to learn, that much of the want of success which attends surgical operations, depends on inflammation of veins, which they too frequently and unnecessarily tie.

Inflammation of veins may be produced by external injuries and surgical operations, even by the slight operation of phlebotomy. Some forms of rheumatism are nothing more than inflammation of veins; and I believe the great majority of cases which are supposed to be inflammation of absorbents, will, if properly investigated, prove to be inflammation of veins. The great danger appears to depend on the tendency which the inflammation has to extend itself towards the heart.

*Symptoms.*—Pain in the course of the vein increased on pressure; tension, swelling and inflammation of the cellular tissue in the neighbourhood, which at last involves the whole limb, when the disease frequently goes by the name of erysipelas, or diffuse cellular inflammation. When the vessel is near the surface, a red line follows its course, which feels knotty here and there; the limb cannot be moved without intolerable pain; abscesses frequently form in various parts, when the affection is often called phlegmonous erysipelas. I do not assert that erysipelas is always produced by inflammation of the venous system, or that inflammation of a vein will always extend to the surrounding parts, and produce erysipelas; but my experience, and morbid dissections, have convinced me that these circumstances not unfrequently take place; but I shall say more on this subject when treating of erysipelas.

The combination of symptoms denominated fever, takes place, and increases with the disease, and is too often termed typhus; the circulation is seriously affected; the head suffers, and early delirium often occurs.

Inflammation of veins terminates in what is called resolution; that is to say, it is cured without injury to their structure, or that of surrounding parts. Suppuration is said to be the most common result of inflammation of veins; but it does not appear to me quite certain that pathologists have always been able to discriminate between pus and lymph effusion. Sometimes the vein becomes obliterated by the thickening of its coats, either with or without adhesions, which form in the canal itself by means of coagulated blood, which becomes organized, or of lymph, which is thrown out, or, as some allege, of pus, which concretes. When the principal trunk of a limb becomes impervious, infiltration into the cellular membrane takes place, producing a great enlargement of the extremity; and Dr. D. D. Davis, Professor of Midwifery in the London University, has the great merit of being the first who discovered this to be the cause of the disease denominated *phlegmasia dolens*; a discovery which has not only thrown light upon the disease in question, but also upon surgical pathology.



Inflammation of veins sometimes, though rarely, terminates in ulceration and gangrene, involving the surrounding soft parts. Ossification of veins is rarely observed; I have seen only one instance of it, and that was in the crural vein. The arterial system was very much disorganized from the same cause. The preparation is in my museum.

#### PHLEGMASIA DOLENS.

*Symptoms.*—Some time after delivery, (within the fourth or fifth week,) pain, or some degree of uneasiness, is complained of in the hypogastric, lumbar, or inguinal region, with slight fulness at the upper part of the thigh, which soon increases, and extends downwards, affecting the labium on the same side. The progress of the tumefaction varies in different cases. In some, the enlargement takes place rapidly; thus, I have seen the limb attain nearly twice the size of the other, in the course of thirty hours from the time the person first began to complain. Generally, however, the disease is more slow in its march, the swelling increasing to its greatest size in the space of from forty-eight to seventy hours. On examining the limb, it will be found to be tense, somewhat elastic, white, shining and hot, extremely painful, particularly upon pressure or motion. The patient is unable to move it herself, and experiences a sensation as if it were considerably larger than it actually is. Most frequently the disease is confined to one side, both limbs are rarely affected at once; but it sometimes happens, that as it declines in one leg it attacks the other.

Occasionally the pain is first felt in the calf of the leg, or the inner condyle of the knee, darting upwards and downwards; but in either case the tumefaction goes on rapidly. The pulse is frequent; the skin hot; and the thirst urgent, with great restlessness. The lochial discharge cannot be taken into account, as the disease seldom comes on till it has disappeared.

The phenomena above described are frequently preceded by decided marks of uterine irritation, and often by rigors; indeed, the worst form of this complaint, is that which succeeds to peritonitis, and to symptoms indicating considerable irritation or inflammation of the membranes of the brain; and I have seen three instances in which women were attacked with phlegmasia dolens succeeding to affections of the head, which had been preceded by severe peritonitis.

The peculiarities of this disease are, that the limb is hot, white, and although swollen, the parts preserve nearly their relative proportions; in anasarca, the limb is generally cold; the swelling is greatest at the most depending part; and it pits on pressure, which does not happen, in the first stages at least, of phlegmasia dolens.

The duration of this curious affection is very various, depending much upon the constitution of the patient, the severity of the attack, and the mode of treatment in the early stage. In bad cases, which have been allowed to go on too long without applying the proper means, it is tedious and intractable, occupying weeks, and even months, leaving the patient, even then, feeble and in a

dangerous situation. Under such circumstances, the limb will rarely recover its former small size, and will be for a long period stiff and powerless.

It will be found that Mr. White's description of the symptoms varies from that of Mr. Brandon Trye, and both, somewhat, from that of Dr. Hull; and Dr. Dickson states, that the march of the disease in the same woman varied in different attacks, which is exactly what I have myself noticed. In the 2d. vol. of the "London Medico-Chirurgical Journal," it will be found that Dr. Belcombe mentions the case of a lady, the mother of four children, who experienced three violent attacks of this disease, after giving birth to the first, third, and fourth child,—her labours having always been easy and natural, and her general health good, except a decided tendency to constipation. The first attack commenced with pain in the right groin; the second commenced with pain in the calf of the left leg. The third attack was the most severe of all, and commenced about four days after delivery, again with pain in the right groin, and after violently affecting that limb, attacked with equal, if not greater severity, the left; no lameness or enlargement followed, but there was a tendency to swell in the evening, and a feeling of stiffness upon the least exertion. (Page 497.)

Phlegmasia dolens occurs also during pregnancy. In the same volume of the work above quoted, Dr. Dickson mentions having seen one case during pregnancy, and relates another, which occurred to Mr. Henderson, a surgeon in Bristol. He further states, that he is indebted to the same gentleman for an interesting example of this affection in the unmarried and unimpregnated female. Puzos relates three cases which occurred during pregnancy. In Thomas's "Practice of Physic," mention is made of an instance of this affection happening in an aged woman. I have myself seen it under all these circumstances; and it now appears, as I shall subsequently shew, that it is not confined to the female sex.

*Pathological observations.*—Some obscure hints are to be found in the works of Hippocrates, which would lead us to suppose he had seen the disease. Acastro, a very old author, makes some pointed remarks in the seventeenth chapter of his third book, respecting swellings of the legs after parturition. The celebrated Wiseman notices a case, in the fifth chapter of the first book of his surgical works. Mauriceau, however, is the first author, as far as I know, who has given a tolerable account of its symptoms. The twentieth chapter of the first part of his works, is entitled, "Of the swelling of the limbs and thighs of women recently delivered." Puzos and Leveret also mention it, and suppose it to be produced by a translation of milk, which they imagine to be infiltrated into the limb. Mr. White of Manchester was of opinion, that the disease is owing to the bursting of the lymphatics, from the pressure of the child's head, and the retention of the lymph, in the lymphatic vessels and glands of the limb. Mr. Brandon Trye supposed the disease to be seated in the lymphatic glands themselves, which are obstructed by the pressure of the uterus and its contents. Dr. Hull, who wrote a very learned treatise upon this

disease, conceives that it "consists in an inflammatory affection, producing suddenly a considerable effusion of serum and coagulating lymph from the exhalents into the cellular membrane of the limb," (p. 204.) He considers that the pyrexia proves beyond all doubt the existence of a general inflammatory diathesis; the excruciating pain, tenderness, heat, and swelling of the leg, equally evince the presence of topical inflammation; the seat of the disease he believes to be in the muscles, cellular membrane, and inferior surface of the cutis; and in some cases, perhaps, the inflammation may be communicated from these parts to the large blood-vessels, nerves, lymphatics, and glands. An attempt has been made to identify this disease with diffuse inflammation of the cellular membrane; but in the disease I am now describing, there are no marks of inflammation of the cellular substance, whether sub-cutaneous or intermuscular, or of the muscular fibre itself, and the external aspect of the affected part is very different. Dr. D. D. Davis, Professor of Midwifery in the London University, to whose ingenuity operative midwifery stands much indebted, being dissatisfied with all the pathological opinions that had been laid before the profession, set about the investigation with a mind unfettered by any particular doctrine; and so determined was he to be guided by the appearances displayed on dissection, that he resolved to employ an anatomist, who was to be requested to draw up his own report. The first fatal case which occurred in Dr. Davis's practice, was that of a poor woman in St. Giles, in the year 1819, and Mr. Laurence, one of the most distinguished anatomists and pathologists in London, was requested to conduct the dissection. No distended lymphatics were observed, nor diseased lymphatic glands, but the crural vein was found diseased and thickened in its coats, and its cavity obliterated by an organized coagulum, and a matter which appeared like pus. Dr. Davis made public the result of this dissection in his class-room, and it became the subject of discussion at the Medical Society of St. Bartholomew's Hospital; and perhaps it is fortunate for Dr. Davis's fame that that discussion took place, as very daring attempts have been made to deprive him of the merit which is so justly due to him. Subsequently to this period, Dr. Davis and others have had several opportunities of examining fatal cases, and in every instance, as far as I am aware, either the crural or the iliac veins were found affected in a similar manner.\* After lecturing upon this subject in December 1824, the late Dr. Dease, surgeon to the forces, who did me the honour of attending my class, told me that he had produced such a disease in the person of a serjeant of an Irish militia regiment, by tying the saphena vein to cure a varix. All the phenomena of *phlegmasia dolens* took place; the inflammation of the vein seemed to extend into the abdomen. The disease was subdued by copious depletion, but the man had a narrow escape. It would appear that the same circumstance has happened in the hands of Sir Astley Cooper, by tying the same vein. I have heard of a case which occurred after amputation, in a male patient operated on in the Westminster hospital; *phlegmasia dolens* took place in the other

\* Vide Vol. xii. part 2, Med. Chir. Trans. of London.



limb, and after death the disease was traced from the vein of the stump, which became inflamed soon after the operation. The disease ascended along the vessel, so as to affect the iliac portion of it; after reaching the bifurcation of the *vena cava*, the inflammation extended down the iliac vein on the opposite side, which was found thickened, and contained the same kind of plug observed in Dr. Davis's cases.\*

In the present state of our knowledge, I am far from alleging that inflammation of the veins is the only cause of this affection; but I conceive that no reasonable mind can reject Dr. Davis's pathology.

*Treatment.*—It would appear that Puzos was among the first who recommended blood-letting in this disease, and Leveret followed his footsteps; but topical bleeding was not used until recommended by Mr. Trye. If the pulse be strong, and the patient robust, it may be found advisable to take blood from the arm in considerable quantity; but should *phlegmasia dolens* succeed any other acute disorder, which has left the patient much weakened, either by diseased action, or the remedies employed to reduce it, the lancet is inadmissible. We must then rely upon topical bleeding by leeches, purging, fomentations, and blisters; in all cases, large doses of calomel and opium are necessary. As soon as fulness, with pain increased on pressure, is observed in the inguinal region, we shall have reason to dread an attack of this disease, and therefore must be our guard; and should there be the least appearance of its becoming worse or extending, ten, twenty, or thirty leeches should be applied over the part affected, and repeated, in increased numbers, again and again, if necessary. The great point to be attended to, is to arrest the disease before the swelling takes place in the extremity. In this way, I think I have been able, during the last ten years, to check it several times in its first stage. If not called till the whole limb has become swollen, we must have recourse to the leeches in such numbers as the strength of the patient will admit. Antimony is to be used as a counter-stimulant; in all cases it is a powerful means of enabling us to save blood. I cannot agree with Dr. Davis, respecting the administration of digitalis, when we have a more powerful and certain remedy in antimony. In the latter stages of the disease, blisters are to be applied, so as to occupy the lower part of the belly, as well as the upper part of the thigh of the patient. I have seen good effects, in one case, from the application of ice to the limb in the early stage of the disease, but it might prove a dangerous remedy after the swelling has taken place. During recovery, frictions and bandages will be found very beneficial.

With respect to the general treatment of inflammation of veins, it may be shortly stated, that it must be conducted upon the same principles as recommended in other severe inflammatory complaints. But I would strongly urge the free and early administration of calomel and opium.

\* The reader is referred to the dissection recorded at page 378, of this volume. The appearance of the veins is described in a young woman who survived an attack of the disease for some years.



## CHAP. VIII.

### PLETHORA, AND EXSANGUINITY.

---

I WISH to restrict the term plethora to express an undue quantity of blood in the system. Although it can scarcely be ranked as a disease, yet it deserves to be treated of in a course of the principles and practice of physic, as being a powerful predisposing cause of many serious affections.

Where there is such a redundancy of blood in the system as to threaten mischief, some of the following symptoms will be observed:—an overpowering sense of heat and fulness; flushed face; oppression in the chest, and more or less difficulty in breathing; weight at the præcordia; a sense of uneasiness or fulness in the head; a full, strong pulse; occasional vertigo; a difficulty in keeping awake, particularly after a hearty meal; disturbed nights, from heat of surface and disagreeable dreams; an appearance of debility, which is not real, but which induces many people to take more food and more wine, even when the pulse is full and bounding. The bowels will be found to be out of order, and the tongue, in general, loaded. To a person so affected, the least accident, as a fright, or exposure to cold, or drinking a cold fluid, or eating any thing indigestible, deranges the balance of the circulation, and simple apoplexy may be produced, or congestion of some other internal organ, terminating in inflammation; or the combinations of symptoms denominated fever, may take place.

*Causes.*—In youth, generally speaking, the constitution is plethoric, the demand for blood being great to meet the wants of the system, to supply the means of growth, and the developement of the various organs and functions of the body. At the age of puberty the system is very active; and it is sometimes matter of wonder, how quickly the various parts of the body take on the appearance of manhood. The age of puberty, therefore, is well known, even to the vulgar, as being a critical period of life.

The plethora necessary to affect all these changes, subsequently becomes less and less requisite, and its continuance is the cause of many serious maladies, which are known to take place at this age, in the shape of fever, inflammation, and consumption. Indolence, and sedentary habits, are also causes of plethora.

Some people make blood quickly; feed them on the lowest diet, but give them liquids, and they will still be plethoric; but there are others, who daily

feast upon the richest article of food, and yet can never be said to be in that state.

*Treatment.*—It is fortunate for mankind that diarrhœa so frequently takes place, and assists the constitution when struggling for her very existence; that profuse perspirations are so easily excited; and that the kidneys act occasionally so as to produce an increased flow of urine,—all of which circumstances tend in a remarkable manner to deplete the system. It will be observed, that eruptions of various kinds appear on the face, back, breast, and shoulders, at the age of puberty, acting the part of good counter-irritants, to the relief of internal organs; these eruptions, which are generally of the slow suppurating kind, produce considerable local irritation. Sometimes I have seen urticaria appear very generally over the surface of the body, when the system was to all appearance in great jeopardy. Epistaxis is known to take place frequently in plethoric subjects, and is often productive of the greatest benefit.

The buoyancy of spirits, so peculiar to young men, urges them to athletic and manly exercises, and does good, not only by strengthening the frame, but also by preventing plethora. In females, the menstrual discharge appears to operate in preventing a redundancy of blood.

These circumstances lead us at once to the proper plan of treatment, not only for the purpose of preventing plethora, but of reducing it when it does exist, and threatens danger. Blood-letting occasionally saves life; but it is very far from being necessary to the majority of cases, unless some important organ is threatened with inflammation. At first, the bowels should be very freely acted upon, and subsequently kept regular, so that the patient should have one or two free evacuations daily. Regular exercise; moderate indulgence at table, avoiding slops; early rising; and sleeping in a well aired room, are all points of the greatest consequence.

#### EXSANGUINITY.

THIS disease is characterized by a deadly paleness over the surface of the body, particularly of the face and lips. The pulse is quick and feeble, easily excited, and there are frequently palpitations; the appetite is impaired and fastidious; the bowels are disordered; there is languor, general debility, and emaciation.

There is considerable approach to this affection in chlorosis; and it is sometimes produced by the actual loss of blood. This is an affection which has been noticed by the older writers, but we are not yet acquainted with the pathological condition of the body on which this bloodless state depends, when it is not occasioned by any actual loss of blood. I have seen the affection occur at all ages, and in individuals of apparently very different habits and occupations. The most unsophisticated example of exsanguinity on record, with which I am acquainted, is that related by Dr. Combe of Leith, in the 1st vol. of the “*Med. Chir. Trans. of Edinburgh.*”

This disease affected a considerable number of workmen, who were employed in a coal mine at the village of Anzin, in the immediate vicinity of Valen-

ciennes, in which neighborhood I resided for upwards of two years, and had frequent opportunities of satisfying myself of the correctness of the statements, given in the 9th vol. of the "*Journal de Medicine*," by Professor Halle of Paris. Although the disease attacked the men severely, who were employed in a particular mine, yet I observed that a considerable number of others were pale and emaciated, and very few of the colliers looked strong and ruddy. The pit in which the epidemic occurred, was one hundred and twenty fathoms below ground, excavated in the same manner as the others, only, from being longer, it admitted fresh air less readily; its temperature was  $64^{\circ}$ , and it exhaled an odour of sulphuretted hydrogen gas, and respiration in it is described to have been difficult. The workmen affirmed, that the water which filters across the mine, on touching their hands, or the naked part of their bodies, produced blisters and boils. Nevertheless, they had the imprudence to use it occasionally for the purpose of allaying thirst. A description of the symptoms was sent to the School of Medicine in Paris, by which it appears, that the disease commenced with violent colics, pains in the intestines and stomach, dyspnœa, palpitations, diminution of strength, distension of the abdomen, and stools of a black and green colour. The patients continued in this state for ten or twelve days, or more, when the abdominal pains ceased, but the pulse remained feeble and contracted; the skin lost its colour, and became of a yellow tinge; locomotion was performed with difficulty, and accompanied by great fatigue; frequent palpitations caused an extremely painful state of anxiety; the face became swollen, and copious perspiration took place. This state is represented to have continued even for more than a year, attended by wasting and emaciation. At length, the original symptoms recurred with violent head aches; frequent attacks of syncope; intolerance of light and sound; tympanitic distension, pain in the belly, and purulent stools; and death soon closed the scene.

When these details were transmitted to the Society of the School of Medicine in Paris, out of fifty attacked with it, three died, and none were perfectly cured. Upon an earnest request on the part of the Society, four pitmen were sent to Paris, on purpose that the phenomena of the disease might be more carefully watched,—the treatment more efficiently directed,—and in case any of the patients died, that the appearances on dissection might be minutely recorded. Two of these men recovered perfectly, one imperfectly, and one died. The following appearances were found on dissection. "The abdomen contained no serous exudation. The intestines, and especially the colon, were very much distended; and the fat, both sub-cutaneous, and in the omentum and mesentery, was very yellow. The liver was small, and did not project beyond the ribs; it was soft and pliable in every part; it was of a pale yellow colour, both externally, and in its substance, which was soft and unctuous to the touch. The gall bladder was half full of bile, of a colour like the yolk of an egg; and when analysed, was found to contain much coagulable albumen. The spleen was small, and softer than ordinary; and the liquid which flowed from it, as it generally is, was red, like the dregs of red wine.

The stomach, when opened, was found half full of a liquid, coloured like the dregs of wine. The duodenum, and the jejunum, were lined with a mucus of a similar colour; and when that mucus was removed, the membrane, both in the stomach and intestines, in all their extent, appeared white and sound. The matter contained in the rectum was thick and figured, and of a greenish brown colour. All the other abdominal viscera were sound.

In the cavity of the thorax, the right lung adhered almost every where to the pleura, and especially on its anterior part, but the left lung was almost entirely free. In neither was there any remarkable quantity of serosity; both were light, crepitated under the fingers, and there was no congestion. They were externally white, and mottled with dark blue spots; and on incision, a frothy yellowish serosity issued from all points of these substances, but not from any preternatural collection. The heart was of an ordinary size, and its flesh as pale as that of muscles which have been washed and macerated. Its parietes were soft, and the columnæ carnæ small. Its structure was not at all affected. Not a drop of red blood escaped from any of its cavities; but in the left ventricle, a coagulum as pale as the flesh of the heart itself, was observed, which contained no perceptible portion of colouring matter; the pericardium contained no serosity.

The brain was white, the cineritious substance pale, and little distinguished from the medullary substance. Two or three scruples of serosity only were found in the posterior part of the left ventricle, and the choroid plexus was very pale.

In the three cavities, all the vessels, both arteries and veins, were destitute of coloured blood, and contained only a small quantity of a serous liquid. No blood was found in the aorta, as far as its crural subdivisions, nor in the axillaries, as far as the brachial subdivision, nor in the accompanying veins, nor in the system of the hepatic vessels, nor in any of the sinuses of the brain. Upon making a deep incision into the flesh of the thighs, there flowed out a small quantity of liquid and black blood, but from no other part did any flow. The flesh of the muscles which cover the thorax, was exceedingly red; but that of the extremities not much so.

With respect to the appearances observed in Dr. Combe's patient, it may be briefly stated, that they were similar.

*Treatment.*—Mercury has been tried, but the result does not afford much hope of its being pre-eminently useful; and, in some cases, it was decidedly injurious, by producing febrile excitement. The most favourite remedies are stimulant and tonic medicines, with occasional opiates, when required to relieve the griping pains in the bowels, together with the employment of gentle laxatives. Professor Halle speaks highly of chalybeates. I have seen several children, who suffered much from the draining of blood after being leeches; but all of them recovered under light nourishing food, ass' milk, and a small quantity of brandy three or four times a-day, together with warm clothing; the patients being kept as much as possible in the open air.



## CHAP. IX.

### CYANOSIS OR BLUE SKIN.

---

THIS affection is also known by the term "*Morbus Cæruleus*."

*Symptoms.*—Discolouration of the skin, which is sometimes blue ; at others, livid or violet ; the whole surface is in this state, even that of the mucous membrane lining the mouth. There is cough, palpitation, sometimes syncope. In some cases dyspnœa is a constant attendant, which is increased by exercise, a loaded stomach, constipation and mental emotions, together with the application of cold and damp.

*Pathological opinions.*—This disease is usually attributed to a communication between the right and left side of the heart, or to some other malformation of that organ, by which means a considerable portion of venous blood is circulated in the arteries, without having previously passed through the lungs. The passage of blood from the right side of the heart to the left, may take place in consequence of the *foramen ovale*, or *ductus arteriosus*, continuing pervious after birth, or by an artificial opening between the right and left ventricle.

Dr. Gintrac, Professor of Anatomy and Physiology in the School of Medicine at Bordeaux, published a work on this subject in 1824,\* and he has collected the results of fifty-three dissections, of which the following is an abstract.

22 times the aorta was found to arise from both ventricles.

33 — the *foramen ovale* was open.

14 — the *ductus arteriosus* was open.

4 — a single heart, of one auricle and ventricle.

5 — the ventricular septum was imperfect.

22 — the pulmonary artery was contracted.

5 — the pulmonary artery was obliterated.

1 — the aorta was obliterated.

4 — the aorta was seen arising from the right ventricle, the pulmonary artery from the left.

The above table is very interesting in many respects ; it proves that the disease upon which the colour of the skin depends, is generally congenital,

\* Observations et Recherches sur la Cyanose, ou Maladie Bleue.

when it either very soon proves fatal, or perhaps not till the child suffers from teething, or begins to walk alone. But, as Bertin remarks, many of these lesions have existed without the appearance of this affection of the skin. It is well known that a disease presenting similar external characters has been produced by the action of the nitrate of silver. I have seen two cases in which the disease followed the exhibition of this remedy ; and in both it was prescribed by the late Dr. Baillie for the cure of epilepsy, and in neither of the subjects were there any symptoms of an organic affection of the heart. It is probable that in such cases the nitrate of silver produces a change either in the condition of the blood, or in that tissue which gives the colour to the surface of the negro. Bertin supposes that the disease depends upon a retardation of the blood in the whole venous system, and not upon the admixture of black and red blood, as has been alleged by others.

*Treatment.*—Should the disease depend upon any of the malformations of the heart, already noticed, it is not to be supposed that any remedy will cure it ; but something may be done to mitigate violent symptoms, and prolong life, by avoiding exercise, as well as every other circumstance which can tend to hurry the circulation, and quicken respiration. In two cases already quoted, in which the discolouration of the skin was produced by the action of the nitrate of silver, every possible remedy was had recourse to, first by Dr. Baillie, and afterwards by myself, without success.



# PART V.

---

DISEASES OF THE NERVOUS SYSTEM .





## CHAP. I.

### GENERAL REMARKS ON THE DISEASES OF THE BRAIN, &c.

---

HITHERTO a description of the disorganizing effects of diseased action on the matter of which the body is composed, has more particularly occupied our attention; now, however, a more difficult task has to be attempted, as the inquiries now commenced involve the consideration of the functions of the brain, including the investigation of that class of affections commonly but perhaps erroneously termed the "*diseases of the mind*." There are great difficulties to be encountered at every step; one of these relates to the nature of that which is called "*nervous energy*," and the manner in which it is propagated and conveyed to the different parts and organs of the body. Another obstacle, which too often thwarts us in our investigations, proceeds from the speedy manner in which the functions of the brain become so much affected, as to render the sick unable to give a correct account of their feelings and symptoms. In truth, many important discoveries must be made by anatomists and physiologists, before pathologists can be expected to explain fully and satisfactorily the true nature and seat of the numerous and complicated diseases of the brain and nervous system. The first step to improvement is to acknowledge our ignorance; but in doing so, it must not be supposed that these branches of medical science have been allowed to stand neglected. On the contrary, there are many able and industrious cultivators in the field, both at home and abroad, and much substantial advancement has been already effected by their investigations.

'*Universa Arabum scholæ mansiones multas, in cerebro statuit et singulis facultatibus singulas sedes assignat.*' So says Laurentius, and from the experiments of Rolando, Flourens, Serres, Magendie, Sir Charles Bell, and others, it would appear to be incontestible, that different parts of the brain and spinal marrow perform different functions. It is indeed true, that there is a want of agreement in the results of the experiments of some of these distinguished physiologists, and that the discrepancies must be decided by subsequent experiment, before the precise value of the statement already laid before the public can be accurately determined. In the mean time, however, it must be held, that the grand and leading fact is already proved, that the brain performs some actions essentially different from those emanating from

the cerebellum ; and both of these parts from the medulla oblongata, and spinal marrow ; and that the ganglionic system is in some measure independent of the brain, and is engaged in performing peculiar functions.

The brain has been divided by those distinguished anatomists and physiologists, Gall and Spurzheim, into a number of organs, which they conceive to be separate ganglions ; and although I must confess I have had neither time nor opportunity to examine their system with that care and attention, which the importance of the subject demands, and which might enable me to give a decided opinion respecting the truths of all its parts, yet experience and observation oblige me to state, that much of their doctrines appears to be true, and that science owes a great deal to the labours of the gentlemen who have been engaged in phrenological inquiry.

It would seem that the superiority of man to animals, and of one man to another, does not depend on the absolute size of the head, or even on the relative size of the brain ; for it has been proved, that the brain of a sparrow bears as large a proportion to its body as that of a man, and that of a canary-bird a still larger proportion. Man owes his superiority over the rest of the animal creation to a larger developement of the anterior lobes and hemispheres of the brain, and to the number and depth of the convolutions.\* One man would seem to excel another in intellectual and moral worth, not from the absolute size of the head, but from a difference in the proportion of certain parts of the cerebral mass. Upon the repeated observation of these the phrenological doctrines have been founded.

It appears to be established by experiment, that there are nerves devoted solely to sensation, and others to muscular motion, while there are nerves combining both these properties.

In a work published by Flourens in the year 1824,† the results are given of a great many experiments performed on the lower animals, which prove that different parts of the nervous system perform different functions. When the two lobes of the cerebrum were simultaneously removed from fowls, deafness and blindness were produced ; the animals fell into profound torpor ; they appeared to have lost all sensation ; could neither eat nor drink, except when food was put into the throat ; but when irritated and roused, they could walk, jump, or fly. When the experimenter removed one lobe of the cerebrum only, the animals became deaf and blind on the opposite side of the body ; the sensibility was only partially destroyed, and the lethargy was not so profound.

When he removed the cerebellum from a number of animals, they did not lose their sensibility, neither did they become deaf, blind, nor comatose. The animals still possessed the power of muscular motion, but they were unable to

\* Magendie first observed a connection between the number and size of the convolutions, and the vigour of the intellectual faculties.

† *Recherches Experimentales sur les Propriétés et les Fonctions du Système Nerveux, dans les Animaux Vertébrés.*

controul it. They could not balance their bodies ; their movements were tottering, like those of a person in a state of inebriation.

In a third set of experiments, he removed the *corpora quadrigemina* in some of the animals, and total blindness of both eyes, with immobility of the iris, were the consequence. When the right was removed, blindness of the left eye took place. When the left was removed, blindness of the right eye was produced. When the *corpora quadrigemina* were wounded, contraction of the iris and weakness of vision occurred on the opposite side. Partial removal weakened the action of the iris, and produced partial blindness on the opposite side. Deep wounds of the *corpora quadrigemina* produced partial blindness ; but, as the parts healed, vision was restored. The organ of vision seems to be the only part affected by injury or removal of the *corpora quadrigemina* in the lower animals.

Flourens next performed a series of experiments to ascertain the functions of the medulla oblongata. He found that injuries and wounds of this organ produced convulsive movements in the parts supplied by nerves issuing from it ; and he draws the following conclusions. 1st, That the lobes of the brain, which neither regulate nor excite voluntary motion, are the seat of intellect, volition, and sensation. 2d, That if the lobes of the brain or cerebellum are irritated or wounded, contractions of the muscles never follow : but he has proved by experiment, that the spinal marrow is the immediate agent of all the muscular movements and contractions ; but it is not the seat of volition, nor does it possess the power of regulating the muscular action. 3d, That the cerebellum possesses the power of regulating the muscular action. 4th, That in the lower animals, the power of vision depends upon the *corpora quadrigemina*. 5th, That the medulla oblongata is the centre of the involuntary movements. 6th, Another important result is ascertained, that deep wounds may be made into the substance of different organs of the brain, and considerable portions removed, without destroying the functions of the parts. And further, that complete recovery of their functions may take place as the brain heals, after they have been for a time partially or totally lost.

From these and other statements in his work, it will be observed, that Flourens believes there are three distinct phenomena in every voluntary motion : first, volition, which depends on the hemispheres ; secondly, co-ordination, or regulation of movement, which depends on the *cerebellum* ; and thirdly, irritation, or that power which excites muscular contraction, which depends on the *medulla oblongata*, the medulla spinalis, and nerves. He has been led to believe that volition, sensation, and perception, constitute one faculty, which is a function of the hemispheres of the brain. It may be briefly mentioned, that Rolando, from experiments performed previously to those of Flourens, came to similar conclusions, but with this exception, that while the latter makes the cerebellum the regulator of voluntary movement, the former considers it the source whence the motion proceeds.



Flourens next performed experiments on many animals, to ascertain the precise effects of opium, belladonna, and alcohol. He concludes that opium acts more particularly upon the functions performed by the lobes of the cerebrum; belladonna on those performed by the *corpora quadrigemina*; and alcohol on the cerebellum. It must be confessed, however, that these experiments are not worthy of so much attention as the former.

It would appear by a report made to the Academy of Sciences, upon the memoir of Flourens, by Portal, Count Berthollet, Pinel, Dumeril, and Baron Cuvier,—that these experiments were performed with the greatest care and circumspection; that Flourens repeated the principal ones before these philosophers; and that they appeared correct. It would be difficult to find five men better qualified to decide upon a scientific subject.

In the work published by Professor Serres\* in 1826, it is asserted, at page 662. of Vol. II. that when an instrument is plunged into the lobes of the brain, or into the cerebrum to a certain depth, severe pain and great sensibility are manifested; although he alledges, that the *medulla oblongata* is the principal seat of sensibility. At page 664, this author assures us, that disease of the *tuber annulare* and *medulla oblongata* produces paralysis, equally in the superior as in the inferior extremities; whereas disease of the lobes of the cerebellum affects principally the sacral extremities; and disease of the lobes of the cerebrum, the superior. He thinks that disease of the *corpora striata* is shewn by effects being produced on the inferior extremities; that of the *thalami nervorum opticorum* on the superior. He also alleges, at page 687, that disease affecting the radiations of the *thalami nervorum opticorum* impedes respiration more than that of the radiations of the *corpora striata*; and that disease of both affects the voice, speech, and pronunciation. The same author also asserts, at page 689, that the lobes of the brain exercise a very powerful influence over the voluntary muscles; and that injuries of these lobes are followed by paralysis on opposite sides of the body.

Flourens contends, that when the medulla oblongata is injured, convulsions are produced on the same side of the body, which Serres thinks deceptive, (page 641,) and asserts, that the same law holds good with respect to the medulla oblongata, as with other parts of the brain, viz: That injuries on one side produce paralysis on the opposite side of the body.

Serres concludes also, that the cerebellum is the seat of sexual desire; and has brought forward facts which appear to shew a remarkable coincidence between great and long continued excitement of the sexual organs in both sexes, and marks of irritation and disease in the lobes of the cerebellum.

The experiments of Magendie appear in some respects to confirm, but in the majority of points to refute, those of the individuals already mentioned. He states that it is not in the brain proper, nor in the cerebellum, that the principal seat of sensibility or of the *special senses* is placed. The hemispheres of

\* Anatomie Comparée du Cerveau, dans les Quatre Classes des Animaux Vértébrés, appliquée à la Physiologie et à la Pathologie du Système Nerveux.

the brain and cerebellum may be removed in a mamiferous animal, and it will continue to experience sensation, odours, sounds and sapid impressions. Vision however is abolished. Injury of the *thalamus opticus* is also followed by loss of vision in the opposite eye: For the exercise of sight, "the integrity of the hemispheres, of the *thalami*, and, perhaps, of the *anterior corpora quadrigemina*, and finally of the fifth pair is necessary."\* The parts of the nervous system (he continues) which appear to be more particularly destined to motion, are "the *corpora striata*; the *optic thalami* in their inferior parts; the *crura cerebri*; the *pons varolii*; the *peduncles of the cerebellum*; the lateral parts of the *medulla oblongata*, and the anterior fasciculi of the *medulla spinalis*."† Magendie's experiments on the cerebellum and its appendages have been followed by results of the most interesting nature, more particularly as to the agitated and prominent appearance of the eye-balls, and the movements of the animals; but I must refer my readers, for further information, to Dr. Milligan's excellent and condensed translation of the work.

It appears from the investigations and experiments of Sir Charles Bell and Magendie, that the old notion respecting the existence of two distinct powers possessed by the nerves, is correct; but the former gentleman goes still farther. According to him, the spinal marrow consists of three columns, each column performing peculiar functions. All the nerves which arise from its posterior column, are devoted to sensation; those which arise from its anterior column, to muscular contraction; while the middle column gives origin to the respiratory nerves.

The only part of the nervous system which it remains for me to notice, is that of the nerve called the great sympathetic, which, together with its numerous ganglia, are in communication with the brain through the medium of the 5th and 6th pairs of nerves, and the spinal marrow through its whole course on each side of the spine. It is provided with numerous ganglia, which are for the most part deeply seated along the sides of the spine. The nerves of this system are smaller, with more of a reddish colour than the cerebro-spinal nerves, and are distributed in a peculiar manner, not only to organs not under the controul of the will, viz. lungs, heart, stomach, intestines, bladder, uterus, &c. but are also arranged in plexuses around the arteries and vena portæ. They would seem to possess no exquisite degree of sensibility; indeed, Magendie denies that they possess it in the least degree. There are different opinions respecting the structure and functions of this, as well as other parts of the nervous system, and the whole subject stands much in need of revision. It would be well for science if an association of physiologists were formed, for the purpose of repeating the experiments which have been already made upon this subject. I hope there are a few who will agree to the singular assertion made by Dr. George Gregory, at page 331, of his work on the Practice of Physic, where, alluding to these experiments, he states,

\* Magendie's Physiology, by E. Milligan, M. D. p. 112.

† *Ibid.* p. 120.

“that no reasonable hope exists of deriving from them, even if considerably improved, any practical advantage.”

For the purpose of preventing frequent repetition hereafter, it is essential to lay before the reader in this introductory chapter, a short sketch of the principal symptoms which are supposed to indicate disease of the brain. It is also desirable to notice in this place the nature and causes of those symptoms, which are usually ranked in other works as diseases,—viz. headache, vertigo, convulsions, rigidity of the extremities, coma, delirium, paralysis, &c.

1. *Headache*.—Exclusively considered, headache is perhaps less frequently a symptom of disease within the head, than of the disordered action of the stomach and bowels. We sometimes meet with violent pains in the head in cases, the terminations of which shew that there has been no degree of inflammation going on; while, on the other hand, instances are not rare of great destruction of parts where headache has not been a prominent symptom.—Headache may be produced by determination of blood to the head, and is occasionally very much complained of after excessive depletion; some individuals never partake of certain articles of food, without being severely afflicted; and with many, long fasting has also the same tendency. The common effects of intoxication, more particularly when produced by Champagne, are too well known as a cause of headache, to require being here insisted on. There can be no doubt, that loss of balance between the arterial and venous systems in the head, produces this symptom. Persons who are frequently afflicted with headaches, when these are preceded by rigors, attended by giddiness and drowsiness, and especially when produced by every slight exertion, by exposure to cold during the course of ordinary occupations, entering a heated apartment, or taking any stimulant, become objects of serious attention, and require medical treatment. The most efficacious plan is to enjoin rest and quietness, to open the bowels, apply cold to the head, and to bathe the feet in very warm water. Some cases will be relieved by a stimulant, a nourishing meal, or an opiate, while others will require general or local depletion.

2. *Vertigo*.—This is a more important symptom than the former, and is produced by various opposite causes, viz. by determination of blood to the head, as in inflammation of the brain; by the want of a proper supply of blood in the head, as in hemorrhage, or after considerable depletion; by loss of balance in the circulation between the arterial and venous systems; by extravasation within the skull; by ossifications of the arteries of the brain—or by the growth of tumours, and other disorganizations which may occur either on the surface, or within the substance of the brain itself. Vertigo is one of the well known effects of drunkenness; it is also occasionally produced by indigestible substances in the stomach and bowels—by the motion of a ship, a carriage or a swing—by looking over a precipice, or climbing a ladder—or by running round in a circle; and it is rather a curious fact, that



vertigo will take place upon rising out of the recumbent posture after confinement to bed only for a day or two.

3. *Convulsions*.—Convulsions sometimes indicate disease of the brain.—They frequently attend inflammation, and there can be no doubt that they occasionally depend on organic lesions. It would appear that convulsions are occasionally produced by too much blood in the head, and there can be no doubt that they are frequently occasioned by too little blood, as after excessive depletion, particularly when the body is brought into the erect posture. They sometimes take place from the loss of balance in the cerebral circulation. Indigestible substances in the stomach and bowels, and worms, together with the excessive use of stimuli, opium, &c. are well known causes of convulsions. But I shall speak more at length upon this symptom when treating of epilepsy.

4. *Rigidity of the Extremities*.—The occurrence of this symptom, according to some French authors, is never wanting in the state called *ramollissement* of the brain. My experience is in general confirmatory of their opinion, that it takes place in a great majority of such cases; but I shall also speak more fully on this point when treating of *ramollissement* of the brain.

5. *Coma*.—Coma, or even a tendency to it, is a very alarming symptom, more so than any of those already mentioned. It may be produced by various and even opposite conditions of the brain; by inflammatory action, or the growth of tumours; but it is perhaps more frequently occasioned by the state which has been denominated venous congestion of the vessels of the brain, than by any other cause; in fact, this would appear to be the condition of the brain in simple apoplexy. An opinion too generally prevails, that coma always occurs in consequence of compression of the brain by effusion, but this is not the fact, as effusion, if it take place slowly, may exist in great quantity without having such an effect. Coma is a frequent and a very alarming symptom in the fevers of this country, and it is difficult to discriminate the different states of the brain which give rise to this evidence of disease. He who shall be able to point out a sure method of discriminating between the coma produced by the advancement of diseased action, which will terminate, if not subdued, in disorganizations of the brain, and that occasioned by lost balance of the circulation, or by other causes capable of being removed, will confer a lasting boon upon society, and hand down his name to posterity.—One class of cases requires depletion, the antiphlogistic regimen, and the application of cold to the head; while another sometimes requires the most potent stimulants, and will be injured rather than benefitted by the application of cold.

6. *Fever*.—Febrile symptoms are produced by inflammation of any organ or tissue of the body, including, of course, the brain and its membranes.—Yet it must be stated, inflammation may exist in the brain, producing the most extensive disorganizations without causing those symptoms which, when combined, are termed fever. For example, the pulse instead of being fre-



quent, may be reduced in point of number and strength much below the natural standard—to sixty, fifty, or even forty pulsations in the minute. It may be slow at the first onset of the disease, become quick, and continue so for a day or two, then sink below the natural standard, and rise again to one hundred and forty, or even higher, during a subsequent period of the disease. During the course of one hour, great variations of the pulse may be discovered in affections of the brain; sometimes it is very rapid and intermitting, then slow and irregular; oftentimes becoming so weak as scarcely to be felt, and soon again recovering its strength. The character of the pulse must depend upon the constitution of the patient, as well as upon the treatment pursued; and I am acquainted with no disease in which the pulse becomes so quick after considerable depletion.

A hot skin does not always accompany inflammatory action. There can be no doubt, that very generally it does, but experience proves that the exceptions are numerous. The effects of extensive inflammatory action have been frequently discovered in the brain after death, in cases where the heat of skin during life had been below the natural standard, and where the face was dead'y pale rather than flushed.

Restlessness and thirst generally attend inflammatory action, sometimes they occur in inflammation of the brain; but a tendency to lethargy, and even to coma, is perhaps more common than restlessness.

7. *Delirium* is no doubt a very general consequence of inflammation of the brain. But the young practitioner should be aware that it does not occur in all cases, and that delirium may exist without any inflammatory action, nay, that delirium may take place from the want of sufficient circulation through the vessels of the head, particularly when there is a determination of blood to some other organ, as in inflammation of the liver, bowels, and even in small circumscribed inflammations of the skin and cellular tissue. A slight external irritation, such as that produced by a blister, will, in some constitutions, occasion temporary delirium. The French practitioners, who have devoted much attention to the subject of arachnitis, allege that inflammation of the arachnoid, which covers the convexity of the hemispheres of the brain, always produces delirium; but Lallemand, who is one of their best writers, states,\* that he does not think that the arachnoid is the seat of delirium, but that inflammation of the arachnoid produces that symptom by affecting the *functions* of the brain, in the same manner as inflammation of the pleura will produce functional derangement of the lungs, as evinced by the occurrence of cough and dyspnoea.

8. *Paralysis*.—This is a very frequent result of inflammatory diseases within the skull, and of tumours and apoplexy. In paralysis the muscular or motive powers of the part affected may be weakened or entirely destroyed, while sensation may continue unimpaired, slightly diminished, or entirely destroyed. In some instances, sensation is partially or completely destroyed, while the motive powers continue nearly in the natural state. There is a

\* In his second Letter, p. 246.

third condition which is worthy of notice,—a limb may preserve its powers of motion and sensation, but the person may have lost all controul over muscular action; and I have seen instances of this condition in the upper as well as the lower extremities. I have observed it also very often in the hind legs of dogs affected with the disease called “the distemper.” Paralysis has been very properly divided into three varieties; Hemiplegia, Paraplegia, and Palsy affecting a particular limb or part.

Hemiplegia sometimes follows an acute affection of the brain, and very frequently succeeds to an attack of apoplexy; it does occur, however, without being so preceded, when it is said by many to depend upon disease of the liver.

Paraplegia is very frequently produced by disease of the spinal marrow; but the best pathologists believe that it may sometimes be produced by disease of the brain. Paralysis of one limb may, I believe, be produced by disease of its own nerves; I have seen cases of paraplegia, and of great muscular debility of the lower extremities, occasioned by noxious sexual habits; and it is in these cases where local applications and *nux vomica*, or its active principle *strichnia*, appear to be of so much use. Two instances have fallen under my notice, of general debility of the whole of the voluntary muscles with paralysis of the superior extremities, which were attended by rigidity of the flexor muscles of the fingers, while the intellectual faculties remained entire. The disease in both instances was produced by the action of mercury. The individuals stood in the relation of uncle and nephew.

Paralysis is sometimes sudden in its attack; at other times it is slow and insidious. The recovery is sometimes complete; more frequently it is only partial, and occasionally the patient remains in the same state for life.

The short sketch now given of these leading symptoms, is intended to show how difficult it is to understand the diseases of the brain and nervous system; and it is to be hoped, will stimulate practitioners to be minute in the observation and comparison of phenomena, and unwearied in the prosecution of examinations after death. Notwithstanding all that has been so ably written on diseases of the brain, a great deal of error and ignorance yet prevail on the subject. This is not much to be wondered at, when we consider how slowly mankind throw off the effects of long cherished opinions. Nevertheless it is surprising to meet with the most decided affections of the brain, which have been allowed to go on to a fatal termination unsuspected, because the symptoms did not tally, either in point of number or severity, with those laid down in Cullen’s erroneous definitions.

It was a favourite speculation of the late Dr. Monro, that the vessels of the brain cannot contain more blood at one time than at another. Dr. Abercrombie entertains the same opinion, and as he is the most recent writer on the pathology of the brain, and, moreover, as the point involves important practical results, I shall lay before my readers a short examination of his statements and reasoning. At page 315,\* in the second edition, Dr. Abercrombie

\* Pathological and Practical researches on Diseases of the Brain and the Spinal Cord.

thinks he may assume, "that in the ordinary state of the parts, no material change can take place in the absolute quantity of blood circulating in the vessels of the brain. But the blood circulating in these vessels must be divided in a certain ratio betwixt the arteries and veins of the brain; and it is probable, that the healthy state of this organ will depend upon the nice adjustment of the circulation in these two systems." This gives, in my opinion, too arbitrary an influence to the circulation. It is the general belief, that all the organs of the body are liable to be affected in their functions, sometimes with, at others without any alteration in the circulation, and why should this be denied to the brain? Dr. Abercrombie thinks that the brain is not compressible, "because, (says he,) we may safely assert, that it is not comprehensible by any such force as can be conveyed to it from the heart through the carotid and vertebral arteries," (p. 315.) This appears to be rather a hasty assertion; the state of the respiration must have a great influence, not only on the quality or condition of the blood, which I believe to be a source of many cerebral derangements, but on the quantity of blood in any given organ, and more particularly in the brain. In proof of the force with which the heart may act on the cerebral circulation, the following case may be mentioned. A young lady fell down suddenly, and died on the spot. On dissection, an aneurism about the size of a hazel-nut, situated at the origin of the silvian artery, was found, which had been ruptured with such force as to break down the substance of the brain, so that a large quantity of blood found its way to the ventricles.

Dr. Abercrombie endeavours to trace the various ways by which, in such an organ as the brain, derangements of the circulation may be supposed to take place. In a plethoric state of the body, he admits, (p. 315,) that "the arteries going to the head will partake of this general condition, and there will be an effort or impulse which tends to propel an undue quantity of blood into the arteries of the brain. Though no addition to the whole quantity of blood in the brain can actually take place, because the vessels of the brain are already full, the constant impulse will be such as tends to introduce an additional quantity, and, consequently, tends to derange the healthy relation betwixt the arterial and venous systems; for any increase of quantity in the one system, if such actually took place, would lead to a corresponding diminution of the quantity in the other. Let us, say, for example, that the whole blood circulating in the brain is as ten, and that is divided between the arteries and viens as five to five. In the loaded state of the system now referred to, we can suppose a case, in which, by some sudden impulse from the general circulation, the arteries of the brain are, at a particular moment, distended by a quantity as six. In another part of the body this will be followed by a similar distention of the corresponding veins, and the healthy balance of the circulation would be speedily restored; but in the brain the very reverse would happen; for as the whole mass of blood must continue at ten, if the arteries were distended by a quantity as six, the quantity in the veins must be diminished



to four; because the increased capacity in the one system of vessels can only be gained by a corresponding diminution of capacity in the other.

Dr. Abercrombie asserts, that the quantity of blood in the head can undergo no variation, it must be always the same. But that a derangement may take place in its distribution between the arteries and veins; the former may sometimes contain too much, which necessarily leads to a diminution in the latter, and *vice versa*. Let us follow out Dr. Abercrombie's example, assuming the whole blood circulating in the brain to be as ten, and that it is divided between the two systems as five to five. Now, whether we begin by adding or by diminishing, it allows an addition or diminution to the whole quantity of blood in the head, which Dr. Abercrombie believes cannot take place. An increase in the arterial system of the head cannot take place before a diminution occurs in the veins, nor in the veins before a diminution takes place in the arteries; so that if Dr. Abercrombie's position were correct, no loss of balance could by any possibility occur in the vessels of the head.

In tracing the various ways by which derangements of circulation may be supposed to take place in the brain, and in following out the same line of argument, Dr. Abercrombie states, (p. 319,) that "if a depression has been produced of a portion of bone, so as considerably to encroach upon the cavity of the cranium, or if a coagulum of blood has been deposited, so as to occupy a considerable space upon the surface of the brain, the diminution of space thus produced would probably affect chiefly or entirely the venous system of the brain. It would not diminish the quantity of blood which tends to enter the arteries of the head; but it would diminish in proportion to its extent the capacity of the veins, and thus derange the relations betwixt the two systems of vessels, in a different manner from that which has been supposed under the former heads, but analogous in its effects upon the circulation in the brain."

We are entitled to ask, why the arteries should have such a remarkable exemption? Why should the veins be more affected by the pressure than the arteries, unless the depression or coagulum be in the course of the longitudinal or lateral sinuses? If the skull be completely filled during life, and if a piece of bone be depressed or a coagulum be deposited, every part of the brain, and all the vessels, arteries as well as veins, ought to feel it, and not one set of vessels alone.

From all the facts referred to by Dr. Abercrombie in his work, he arrives at last at an important practical conclusion, that we cannot diminish by treatment, the quantity of blood in the head; for, however guardedly Dr. Abercrombie has surrounded himself by cautious expressions, and more particularly in the second than in the first edition, that seems to be his decided opinion. But he shall speak for himself: "Upon the grounds already referred to, there is reason to believe, that we cannot by our evacuations, diminish in any material degree the quantity of blood in the head." But the effect of evacuations, he supposes, will be to take off the excessive impulse from the circulation.



The experiments of my lamented friend, the late Dr. Kellie of Leith,\* and the mechanism of the skull, shew, not as Dr. Abercrombie supposes, that the quantity of blood in the vessels of the head cannot be diminished, but rather, how difficult it is to deplete the brain altogether, or so much as to render it cognizable to our senses on dissection, even in animals purposely bled to death. Certainly we are not entitled to conclude from any known facts or experiments, that the brain must always and under all circumstances contain the same quantity of blood. When blood is taken from the arm, the brain sooner or later becomes affected, as is shewn by the occurrence of giddiness, singing in the ears, impaired vision, &c.; and if the operation be still continued, syncope, perhaps convulsions, will follow. Under such circumstances, it is thought prudent to desist for fear of inducing death. We favour the flow of blood to the head, and do all we can to impede its return, by placing the body in the horizontal posture, allowing the head, in severe cases, even to hang lower than the rest of the body. Were Dr. Abercrombie's hypothesis correct, the circulation in the head, and consequently the functions of the brain, ought not to be materially affected by position; it ought to be nearly the same whether the body were supported upon the crown of the head, or on the tuberosities of the ischia. In a practical point of view, then, both experience and common sense loudly rebel at the bare idea of such notions as those entertained by this author; for if it were wished to subdue a true inflammatory action in the arterial system of the brain, a vein must not on any account be opened, and more particularly the jugular, because, by emptying the venous system within the skull, or doing any thing which has a tendency to empty it, as a matter of course it must follow, that the quantity of blood in the arteries will be increased in the same ratio, because the vessels of the brain must always contain the same quantity,—if there be too little in the veins, a proportional accumulation must take place in the arteries. Upon the same hypothesis, the converse must also hold good, viz. that when there is great accumulation of blood in the veins of the head, acute action ought to be an impossibility; and the most effectual method of extinguishing inflammation in the brain, would be to place ligatures on the jugulars, or by some other means to impede the return of blood from the head. Cupping, leeching, and the application of ice to the head, ought also upon this principle to be injurious rather than beneficial, and the head and shoulder be placed in a depending rather than an elevated position. In conducting this important critical examination of Dr. Abercrombie's doctrines, I have not availed myself of the arguments which could be fairly drawn from the experiments of Drs. Carson and Barry, by which it would appear that the heart exerts a *sucking*, as well as a *propelling* power, and according to which Dr. Abercrombie would have still greater difficulties to contend with. Neither have I taken advantage of cer-

\* In Dr. Kellie's death, the world has lost an accomplished physician; and I have to regret the loss of an able friend, to whose advice and assistance I had often to apply when in difficulty.

tain anatomical facts respecting the cavities in the brain—the free communication between the ventricles of the brain and the bony canal which contains the spinal marrow, nor of the serous fluid which is known to exist in and about the brain and spinal marrow, and which is found on dissection to vary so much in quantity. I have seen several dissections made of the brain and spinal marrow, in cases where effusion of serum had taken place in the ventricles of the brain. The subject being placed on the face, the slightest pressure made on the surface of one of the hemispheres, caused a wave of fluid to ascend beneath the arachnoid of spinal marrow as high as the 4th rib. Pressure applied on both sides of the brain, caused the fluid to mount over the convexity of the back, and find its way to the inferior part of the spinal canal.

## CHAP. II.

### INFLAMMATION OF THE MEMBRANES OF THE BRAIN AS IT OCCURS IN ADULTS—

INFLAMMATION OF THE BRAIN, WHICH TERMINATES IN SUPPURATION AND RAMOLLISSEMENT—INFLAMMATION OF THE MEMBRANES OF THE BRAIN AS THE DISEASE OCCURS IN YOUNG SUBJECTS, AND WHICH IS COMMONLY CALLED HYDROCEPHALUS.

---

1. *Inflammation of the membranes of the brain as the disease occurs in adults.\**—It must be carefully kept in recollection, that in all inflammations there may be not only several degrees of the diseased action, as the acute, sub-acute, and chronic, but there may also be a congestive variety, giving various shades of symptoms. The extent and duration of the disease, the age, sex, and constitution of the patient, must also necessarily give to the symptoms a very wide range of character. Hence, a person who has enjoyed robust health up to the period of an attack of inflammation of the membranes of the brain, will generally be affected in a different manner from another, who, for months before, has been daily losing blood in consequence of hemorrhage from the nose, the uterus, or the bowels. Inflammation of the membranes of the brain may also be complicated with diseases of the lungs, heart, kidneys, or some other organ, producing endless modifications; therefore it is impossible to convey a correct notion of a disease, by means of a definition containing a few of the symptoms.

Cullen has classed all the acute, sub-acute, and chronic diseases of the brain and its membranes under one head, which he has termed phrenitis; and the following is his definition:

*"Pyrexia vehemens; dolor capitis; rubor faciei et oculorum; lucis et sonæ intolerantia; pervigilium; delirium ferox, vel typhomania."*

This definition will neither suit inflammation of the membranes of the brain, nor of its substance. It represents a case of very rare occurrence indeed, and one which is therefore an exception to the rule. Those who have

\* Under this head, I shall treat of inflammation of the arachnoid and pia mater; because there are no diagnostic symptoms by which we can distinguish inflammation of the one membrane from that of the other; but as this distinction is interesting in the present state of our knowledge with reference to morbid anatomy only, I shall defer for the present the further consideration of the subject. I believe that all pathologists, especially the French, have attributed too many of the phenomena to inflammation of the arachnoid, and overlooked the influence of diseased action in the pia mater.

studied nature, will join me in stating, that we rarely, if ever, see the combination of symptoms as above described; and that a patient may show them all, without the existence of *inflammatory action*. On the other hand, we often meet with inflammations within the skull without symptoms of fever, the face being decidedly pale, instead of red; and the pain of head is sometimes not a prominent feature of the disease.

Vogel had probably similar views in his mind when he declared, that "all the acknowledged symptoms of inflammation of the brain are equivocal, not only as to a distinction of one morbid part from another, but as indications of inflammation in any part."

*Phenomena of inflammation of the membranes of the brain.*—1. This disease sometimes attacks a patient in the following manner: There is a well marked rigor followed by pyrexia, intense headache, redness of face and eyes, intolerance of light and sound, violent delirium, pulse at first considerably above 100. In a day or two coma steals on the patient, followed by partial or general convulsions, terminating in death. This, as has been already hinted, is the rarest case to be seen in practice; and it is unaccountable to me how Cullen should have been led, in drawing out a description of the disease, to choose it as his model.

2. Cases are sometimes met with, in which the first prominent symptom is convulsions; but upon making minute enquiry, we shall generally find that the patient had been for some days out of his usual state of health; that he appeared drowsy, and rather inactive. There may be only one severe convulsion followed by paralysis, coma, and death; or there may be repeated convulsions for days, with intervals of sense, till the fatal termination, which is generally preceded by paralysis and coma.

3. At other times the disease comes on with severe headache; violent terror producing loud and long screaming, attended with considerable disturbance in the intellectual functions, so that the patient can scarcely give any account of his sensations; and coma soon makes its appearance.

4. Occasionally a patient complains for perhaps a week of slight feverish symptoms, and tinnitus aurium, but does not suffer much from headache; nor is he observed to have more intolerance of light or sound than most patients labouring under fever, in which the brain is not peculiarly affected. He may complain most of giddiness, and a feeling of weight on the crown of his head; his bowels are observed to resist the action of laxative medicine much more than usual; his pulse may be about 100, without any characters indicating a serious affection; the heat of skin may be somewhat increased at night. At length restlessness gives way to what is thought to be drowsiness; the patient does not answer readily when spoken to, which is attributed to deafness; and as this is neither an uncommon, nor a bad symptom in fever, it is not much regarded, particularly as, when roused, the patient appears quite sensible, and will take any thing which is offered him. But, at last, the coma becomes profound, the pupils dilated; he will sometimes grind his teeth; squinting



will be observed, with partial or total blindness; paralysis of one side of the body; and the patient will gradually sink after repeated convulsions, which in most cases are in the first instance general, but by degrees become more partial, till at last they only affect the muscles of the face, and some of those connected with respiration. Occasionally, however, the convulsions are partial from the first, affecting the muscles of one superior extremity; perhaps only some of the muscles, in which case the hand will probably be found to be twisted during the paroxysm.

5. A fifth form occurs without much fever, but with some degree of headache, intolerance of light and sound, and considerable giddiness; may complain very much of nausea and pain in the stomach, which being the most prominent symptoms, together with constipation, the disease may be attributed to disorder of the digestive organs. Vomiting sometimes takes place, and becomes intractable; every thing taken into the stomach is quickly rejected. The cerebral disease goes on advancing, but in such a manner as to avoid notice, till at last the patient becomes drowsy and comatose, or convulsions appear before the coma is detected, and death sooner or later follows.

6. Another form under which the disease advances, is as follows: A patient, after being affected with some acute disease for two or three weeks, during which he may have been bled, and otherwise properly treated, the original disease appearing to be quite subdued, may complain, while in a state of collapse, of passing restless nights, being disturbed and agitated by frightful dreams. His strength suddenly becomes increased so as to require restraint to keep him in bed; his pulse is weak, perhaps quick, so weak and quick as scarcely to be counted; the extremities are cold, and cannot by the most assiduous attention be kept warm; one or both cheeks present a flush, the size of a shilling, the rest of the face being deadly pale. The raving is constant. There may be *subsultus tendinum*; picking or twisting the bed clothes, or one or both hands constantly in motion, wiping the angles of the mouth and eyes, or engaged as if drawing hairs, either from the fingers of the opposite hand, or from some parts of the face. The tongue, as in the progress of most of these cases, becomes parched and brown; paralysis takes place, with convulsions or coma; and as death approaches, respiration becomes difficult, and the pulse gradually weaker.

7. A person may complain of passing restless and uneasy nights; he cannot lie long in one posture. When about to fall asleep, he is annoyed by some unpleasant thought, or frightful dream; the feet perhaps cold when he went to bed, become very hot; and he has some uneasiness in his head. Towards morning, a slight relieving perspiration takes place; he sleeps a little; and awakes with some degree of headache, which is attributed to bile, or to the bad position of his pillow. His urine may be very scanty and high coloured; the mouth clammy, and the tongue foul; but after being washed and dressed and taking his breakfast, he feels better, and proceeds to attend to his business. During the course of the day, he is weak, and experiences a difficulty in ap

plying his mind to the affairs which usually occupy him. Every thing he does, costs him a struggle; his feet are cold; he feels chilly, and every exposure produces a tendency to rigor. He is observed to be impatient and irritable, even about trifles; and he longs for the hour when his business is to terminate; but he retires from it with increasing headache. When he goes home, his family attributes his complaints to cold, or to over exertion, or to weakness, and he is pressed to take nourishment, and even wine, or spirits and water. These symptoms may be relieved or may continue, the patient getting better and worse for some days, till at last symptoms of a more urgent nature take place, which unequivocally announce the progress of some serious disease; and when a physician is sent for, he finds symptoms denoting a very dangerous affection of the head, or a complicated case which suits his notion of typhus fever. The case may be now beyond the reach of remedies, and the coma soon becomes profound.

In the general remark at p. 403. it has been observed how very variable the pulse is in diseases of the brain, even in the course of the same day. The same remarks are peculiarly applicable to inflammation of the membranes of the brain. The pulse may be quick,—140, 150, or 160, and weak, for in general, when the pulse is so very rapid, it is also very weak; or it may be above 100, and rather strong; it may be at the the natural standard, or a little above it, and either strong or weak; or it may be much below 70, very strong, or only of the proper strength; and under all these conditions the pulse may be irregular, intermitting, and varying very much in strength. Upon the whole, a very slow or a very quick pulse indicates danger; perhaps the former is a more dangerous symptom than the latter, as a pulse often becomes very quick in irritable constitutions, under the application of the usual remedies employed for the cure of inflammation.

The observation already made in the general remarks respecting the heat of the skin, and the other symptoms usually denominated febrile, equally apply to this part of the subject, and therefore need not be repeated.

From a careful examination of the eyes, and general expression of the countenance, the experienced physician gathers much assistance in forming an opinion whether the brain is or is not affected. The pupils, in the first stage, are generally found more or less contracted; as the disease advances, they often become dilated. One pupil may be dilated, while the other is contracted; an immoveable pupil, whether dilated or contracted, is an important symptom. In almost all cases of inflammation of the brain, the conjunctiva is very vascular; in the worst cases I have observed an angular patch, having more or less of a blood-shot appearance, situated near the inner canthus, the apex pointing towards the cornea, the latter part appearing unusually dry and slightly muddy. When there is wild delirium, the eyes have a very brilliant, animated expression; when there is coma, or a tendency to it, they look stupid, and are sometimes void of all expression. There may be squinting of one or both eyes, or they may roll in a frightful manner, may appear as if fixed in

their sockets; or one or both may be turned up, giving the expression denominated pathetic. The eye-lids are generally kept closed in the commencement of affections of the cerebrum, perhaps to avoid the light; as the disease goes on, however, one or both are observed to be half-opened; and there may be partial or total blindness of one or both eyes. This, it may be remarked, is always a more unfavourable symptom than deafness. With respect to the expression of countenance, it is sometimes animated, bold, and even audacious; at others, the expression is subdued; in other instances, there is a total want of animation, or an expression of stupidity, as if the mind were not acting at all; and sometimes there is an appearance exactly resembling that of a man considerably advanced in a state of inebriation. Occasionally the teeth are observed to be clenched, approaching to the state of locked jaw. Sometimes there is an expression as if the patient were labouring under violent pain; at others, it gives the idea of passive suffering.

The speech is variously affected. Patients sometimes shew great volubility; at other times they are taciturn. In cases where there are marks of considerable oppression of the brain, the words hang as it were in the mouth; the patient forgets the names of his nearest relatives, even before he is observed to confound one individual with another, and he frequently falls asleep before he has half finished a sentence. The tongue may be paralyzed partially or completely; in general, when the patient shews it, it appears in a tremor; or it may be in constant and violent motion, pushing out the cheeks, or protruded out of the mouth. It may be either moist and loaded, or dry and covered with sordes.

Respiration is not necessarily affected in inflammation of the brain or membranes; sometimes, however, it is very much so; but dissection has yet to reveal upon what lesions this depends. Occasionally, particularly in young persons, the respiration has a crowing sound, resembling that in the back draft of hooping-cough, of which I shall speak more fully under the head of hydrocephalus. Before a convulsive paroxysm the respiration sometimes becomes very much hurried, and after it subsides it is so slow as to appear altogether suspended.

*Causes of inflammation of the membranes of the brain.*—Experience teaches us, that some individuals, from peculiarity of constitution, or from hereditary conformation, are more liable to inflammation of particular organs than others. Whatever cause disturbs the balance of the circulation between the venous and arterial systems, may cause inflammation of the brain or its membranes. In the fevers which prevail in this country, and which are called typhoid, there are symptoms decidedly indicating disease of the brain from venous congestion; and it is a nice matter to discriminate between a case purely of this nature, and one of inflammation; and still more difficult if the two are united. In the one case stimulants may be used with advantage, and in the other, the same class of remedies may do irreparable injury. Cold; fright; external injury; suppression of any of the excretions; the sudden disappearance of an



old discharge or eruption, or the healing of an old ulcer; exposure to a vertical sun with the head uncovered, are all causes of inflammation of the brain. But constipation of the bowels, in a plethoric habit, in addition to some of the causes just enumerated, most frequently, I believe, occasions the disease. Infants are more liable to inflammation of the membranes of the brain than adults, particularly during the period of dentition. This appears to be owing to determination of the blood towards the head caused by the irritation of the gums. Although men are more frequently attacked than women, yet it is a mistake to suppose, that thinking men are more liable than others to diseases of the brain. It requires something more than the continued exercise of thought and ardent study; there must be conjoined long-continued anxiety of mind, high living, abuse of stimulants, want of exercise, cold feet, or inattention to the bowels. All these circumstances predispose to this affection.

*Appearances on dissection.*—A person may die in the first stage of inflammation of the brain, when the balance of the circulation in the vessels of the head is disturbed; and the patient is said to owe his death to simple apoplexy. On dissection, the only diseased appearances discovered, will be considerable engorgement of the cerebral vessels, with more or less effusion of limpid serum. In inflammatory affections of the brain, we must not always expect to meet with effusion, because the patient may die before this result has taken place, and death may be owing to what is called the shock of the disease, or that produced by the remedies.

We sometimes meet with considerable venous engorgement, not only of the great sinues, but of the trunks of the veins running into them, and very small vessels containing red blood will be seen arborescing with each other in every direction. In many decidedly congestive cases, I have seen the carotid and vertebral arteries distended with dark-coloured blood; occasionally ecchymosed spots are discovered here and there on the surface of the brain.

Pure *arachnitis* must be a rare disease. The arachnoid, in a state of health, is not a very vascular membrane; its vessels do not convey red blood. In my whole experience, I have not met with above six cases of inflammation of the arachnoid membrane. In ninety-five cases out of the hundred, the effusion is situated, not on the serous surface of the arachnoid, but between it and the *pia mater*. In general, if the least effusion is discovered between the membranes of the brain, and in the ventricles, it is noted down without farther examination as the result of inflammation; but I believe there is always some fluid between the two membranes in a state of health. The same remark equally applies to the ventricles; besides which it must be recollected, that venous congestion, or any other cause tending to impede the circulation in the veins, will speedily give rise to a great increase of the quantity of fluid in the brain; and this is what Cullen and others have called serous apoplexy. If, however, there have been febrile symptoms during life, and a considerable effusion found after death, and particularly if conjoined with vascularity, the appearances may be attributed to inflammatory action. This is rendered



more certain, if the effusion look turbid, or contain flakes of coagulable lymph; if the convolutions of the brain be glued together by lymph, extending either from convolution to convolution, or dipping down between them; if the arachnoid which lines the *dura mater* adhere to the proper arachnoid coat; if the arachnoid coat be ulcerated, or capable of being separated from the subjacent membrane in tolerably large flakes. In inflammation of the membranes of the brain, portions of the cerebral mass are occasionally found to adhere very firmly to the surface of the *pia mater*, such portions appearing softer, and of a redder colour, than the rest of the brain. There is one appearance of the arachnoid, to which my attention was first directed nearly twenty years ago by my lamented friend the late Dr. Gordon, as indicative of deep-seated inflammation. This is a dry, unshining appearance of the brain; but I believe it is more frequently observed in inflammation of the substance of the brain, than in that of the membranes.

The membranes of the brain are sometimes found to be much thickened by a deposition of coagulable lymph between them, both surfaces exhibiting considerable vascularity.

There are small white bodies found on the arachnoid membrane in the close neighbourhood, and in the course of the longitudinal sinus, which are called *glandula Pacchioni*. When large clusters of them are discovered, they are sometimes, perhaps erroneously, attributed to inflammation. Small granular tubercles are occasionally seen on the arachnoid; these generally exist in connection with the same kind of degeneration in the lungs; and in two cases which have fallen within my notice, the surrounding substance of the lungs was of a deep red colour. On slicing the hemispheres of the brain to reach the lateral ventricles, the brain is observed to present many red points, which, if examined for a very few minutes, will be seen to yield a little blood, and eventually to become small drops. The ventricles are sometimes found greatly distended with a serous fluid; and when much distended, the openings between them will be seen much enlarged; perhaps a part or the whole of the *septum lucidum*, soft, broken down and ragged. Effusion is rarely, if ever, seen in one lateral ventricle, without being found in the other. I should not be inclined to attribute two or three drachms of serum in the ventricles to inflammatory action; and should be still less inclined to attribute the death of the patient to the effects of such an effusion, because I believe there is always some fluid in these cavities. The lining membrane of the ventricles occasionally shews a considerable number of red vessels, particularly if the disease have been of long continuance; the membrane itself may be softened, or thickened; but this appearance shall be more particularly spoken of under the head of hydrocephalus. The choroid plexus consists of a congeries of small blood-vessels connected together by a very loose cellular membrane. I have seen large flakes of yellow lymph adhering to this plexus, the *corpora striata* and *thalami*. The plexus sometimes thickened, granular, and occasionally vesicular. The vesicles are often mistaken for hydatids; but they

appear to me to have no resemblance to these bodies, and to be nothing more than effusion of serum into different parts of the cellular tissue. I attribute much of the effusion found in the ventricles to diseased action of the choroid plexus, as well as to that of the membrane lining the ventricles.

On removing the brain from the skull, considerable vascularity will in general be discovered in the membranes at the base of the brain, and when there is any effusion, it will be found generally about the central parts, involving the origin of all the nerves, with the exception perhaps of the olfactory. The effusion may consist of a colourless fluid, but in general it is turbid; lymph of considerable thickness and consistence is very often found extending backwards from the point of decussation of the optic nerves, to the termination of the *medulla oblongata*; and there are several preparations and drawings in my museum, in which the effusion is in such quantity, and the membranes so thickened, that the origins of the nerves, the circle of Willis, the basilar, and even the vertebral arteries, are all conglomerated in one confused mass, and some of the parts, particularly the basilar artery, and the vertebrals, are twisted out of their natural situation. In some instances, I have seen the lobes of the brain adhering by an interposition of lymph.—I have also observed the same appearance twice in the hemispheres, and in two or three instances the adhesions were old and extensive,—no doubt the result of a former inflammatory attack.

*Treatment of inflammatory affections of the brain.*—The treatment to be adopted in inflammatory affections of this organ, is the same, whether the disease exists in the substance of the brain itself, or its membranes. There are two difficulties to be encountered in practice. The first is to ascertain whether inflammatory action be actually going on in the brain; and secondly, if it be going on, whether the disease is not already too far advanced to admit of the application of the most potent remedy for the cure of acute disease,—general blood-letting. The most experienced physicians are sometimes at a loss in determining these two points.

The remedies to be used are—bleeding, general and local; purgatives; antimony; cold applications to the head, and warm to the extremities; blisters, and spare diet.

There can be no doubt of the propriety, nay, the necessity of opening a vein in the arm, and abstracting a sufficient quantity of blood, if the inflammatory action be acute, if there be marks of venous congestion in the head, and if there are none of the usual signs of extensive organic lesions present. Even should these exist, if the pulse preserve some degree of strength, if the respiration be natural, the heat of surface considerable, the tongue not parched, and the teeth not covered with sordes, bleeding may be tried. But in all cases of inflammation of whatever organ, the lancet should be cautiously used, if used at all, when the tongue is dry and parched, when the pulse is exceedingly rapid, and more particularly if it be irregular. It appears to me, that bleeding from the arm in cerebral affections, has advantages over

opening the temporal artery, independently altogether of the disagreeable consequences which sometimes happen from the latter operation. By opening a vein in the arm, a very considerable determination of blood is necessarily produced towards the extremity operated upon, and the blood flows more rapidly. The right side of the heart itself is perhaps more immediately relieved by preventing the usual quantity of blood from returning to it, which will in all probability, favour the return of blood from the head, particularly if the shoulders be considerably raised, or if the patient be bled in the erect or half-erect posture.

No physician, however wise and experienced, can tell what quantity of blood ought to be taken in any given case. To bleed in a quantity much under that which is required to subdue a disease completely, is almost worse practice than not to bleed at all; because the patient is robbed of much strength, without destroying or decidedly mitigating the diseased action, and thereby the subsequent treatment is embarrassed.

When bleeding a patient late in a disease, and in doubt whether the application of this remedy may not do harm, the practitioner should be watchful of the expression of the countenance, the state of the respiration, and the pulse. If the countenance become pale and haggard; if the respiration should be either quicker or slower, or more laborious; and if the pulse flag, or become weaker and quicker, then we may be certain that general bleeding should not be pushed further, and our hopes of safety must depend upon other means. Even in the most favourable cases for bleeding, it behooves physicians either to use the lancet themselves, or to see the operation properly performed. I am persuaded that valuable lives are often lost in acute diseases, from neglecting these points, and particularly in the class of diseases now under consideration. It is of great consequence to watch the effects as the operation is going on, and to be particularly observant after a large quantity, say 30 or 35 ounces, have been abstracted. The finger should then be constantly upon the radial artery of the opposite arm to notice the pulse; and when in doubt about proceeding further, it is by far the wiser plan to tie up the arm, reconsider all the features of the case, and in the course of an hour or two, to renew the bleeding, or not, according to circumstances.

In different parts of the first volume, I have endeavoured to impress upon my youthful readers the necessity of perfect devotion to the exercise of their profession; and that they will be successful in the means they employ for the cure and alleviation of diseases, exactly in proportion to the attention they pay to their patients. In inflammatory diseases of the viscera, and more especially of the viscus now under consideration, an hour's delay in the application of an important remedy may cost a patient his life; the visits of practitioners should therefore be frequent, and I would not allow a longer interval to take place between the visits than two or three hours.

Leeches to the temples in considerable numbers are very serviceable; but the bleeding should not be allowed to go on long if the patient be much re-



duced. Warm water should not be used; and before the application of the leeches, it will be highly proper to have the head shaved.

Sufficiently powerful purgatives must be administered. This is almost the only class of diseases in which drastic medicines should be administered, because the bowels are not only difficult to be moved, but experience has taught us, that considerable advantage is gained, not only by the evacuations, but by keeping up a constant irritation along the whole alimentary canal. I am in the habit of giving in very severe cases, large and repeated doses of calomel or croton oil, or both conjoined. Three or four scruples of calomel may be administered, in divided doses, to patients in such circumstances without producing ptyalism. Should a sore mouth take place, it is regarded as a very slight evil if the patient's life be saved. My reason for giving calomel in cases of inflammation of the brain is simply this: many eminent practical men have written so strongly in its favour, that I do not think myself justifiable in withholding it, although I place less confidence in its action than many others do. But in no case do I relax in the employment of other, and, as I think, more potent remedies. The doses of laxatives should be repeated at intervals of three or four hours; and many cases which appear to be hopeless, and too far advanced in their progress to admit of depletion, have recovered under their free and constant use. But care must be taken that the purging is not continued too long. In proportion as the disease gives way, the doses are to be diminished, and the intervals between their administration lengthened.

The application of cold to the head is a most important part of the treatment, and the physician should see that the remedy is properly applied. It has been already mentioned, that the head should be shaved before leeches are put on; the mere removal of the hair will sometimes produce a considerable change upon the temperature of the head, and perhaps nothing further may be necessary; but if otherwise, iced water may be applied. A very good plan, and one which saves a great deal of trouble, is to put pounded ice or snow, mixed with salt, into a large ox's bladder, till it is about half filled, and used as a pillow. A small bladder filled in the same manner may be laid across the crown of the head; a cloth dipped in iced water may be placed over the forehead. If these means cannot be obtained, the best plan is to bring the head over the edge of the bed, keeping it at the same time elevated, and to pour a small stream of cold water out of a jug or tea-kettle upon the head for five or six minutes at a time, taking care to have a basin properly placed underneath, to avoid wetting the bed or the floor. I have seen patients roused out of deep coma, and violent delirium subdued, by cold properly applied to the head, when bleeding had been unsuccessful. At the same time, we are to be careful not to continue the cold applications for too great a length of time, particularly after the patient's strength has been much exhausted, either by the long continuance of the disease, or the application of the more important antiphlogistic means. It is of very great importance to support the



heat in the extremities, and more particularly in severe cases, which is to be done by frictions, hot fomentations, heated bricks, small flannel bags filled with hot sand, or bottles filled with boiling water.

Antimony used in small doses as a counter-stimulant, is a powerful remedy in controlling the circulation after bleeding. It is a remedy which is of great assistance during recovery, and may be given from time to time, when the patient's appetite is likely to be too much indulged, or when he is disposed to be too loquacious.

I beg to enter my strongest protest against the application of blisters to the head, or even to the upper part of the neck, in inflammation of the brain. They ought to be applied to the lower extremities. I urge this recommendation from the result of long and attentive observation; and independently of the disputed theory, as to whether the vessels of the head can contain more blood at one time than at another. Mustard poultices may be applied to the feet. That these remedies may fail, however, and that advantage may be derived from more powerful means, the following case will strongly illustrate:—

Cornelius Hervey was attacked with fever in the beginning of winter, 1823. In the course of the disease, he required several general and local bleedings, for the removal of slight local inflammations. On the 21st day of the fever, when perfectly sensible, and being in a state of very great weakness, he told me he had passed a confused restless night, and that he had had some headache, which he attributed to repeated errors of diet, and having overloaded his stomach. He was relieved by the exhibition of laxative medicines. On the 23d day, when he was reduced to a state of great debility, he became quite delirious, and so furious, that it required two men to hold him down in bed. The extremities were cold; pulse weak at the wrist, of thready smallness, and beating 160 in the minute; his head was hot, and there was a small flushed spot upon each cheek. During the two following days, four leeches were applied to the head, and afterwards ten, without any mitigation of the symptoms, and he was thought to be too weak to bear any further loss of blood. Ice was assiduously applied to the head from the commencement; hot fomentations to the legs; sinapisms to the feet; and hot bricks were placed round the extremities. Still his legs and feet were cold; the sinapisms, although frequently renewed, had not produced the least redness; the pulse had become more feeble; he raved incessantly; there was subsultus tendinum to a great degree; the tongue was hard, dry, fissured, and of a dark colour. As neither coma, convulsions, nor paralysis, had taken place, and as the pupils still contracted upon the application of light, it was thought that no organic mischief had as yet taken place; and as the usual means had failed to produce heat in the extremities, hot spirit of turpentine, both separately and conjoined with *aqua ammoniac*, was applied to the legs and feet, but without producing the slightest redness. Blisters had been applied to each leg and thigh the night before, but they produced no effect. As

a last resource, a towel was dipped in boiling water, and applied to each foot. This measure succeeded in producing a considerable degree of redness; but it is remarkable, that there was only one very small vesication, about the size of a sixpence, produced on the left instep.

At the moment of the application of the boiling water, he became calm and sensible, looked about him as if he had awakened out of a sleep, and knew every person in the room, which he had not done for several days, and he complained of great pain in his feet. The pulse soon became more distinct, less frequent, and the tongue moist. Blisters were again applied to the thighs. Towards the afternoon he became worse, and at night I found him delirious and insensible, with *subsultus tendinum*, a dry tongue, and a small quick pulse. The extremities, and particularly the feet, were quite cold, although warm fomentations and hot bricks had been alternately applied, and although the scalded feet were dressed frequently with hot spirit of turpentine to keep up the action which had been excited in these parts. The blisters which had been renewed on the thighs had not risen. Boiling water was again applied to both legs, from the knees to the ancles. The relief was as instantaneous and decided as had been produced by the same means in the morning, but it was permanent, and from this time his recovery went on without a bad symptom. A superficial slough separated from each leg in the course of ten days, and there was some constitutional irritation produced during the course of that process; but the ulcerations healed kindly. He was for several months very lame, not from the immediate effects of the ulcerations, but from the contraction of the flexor muscles of the leg, which inconvenience arose from the bent position in which he kept his limbs during his illness, but he gradually recovered the free use of them; and the last accounts I heard six years afterwards, informed me that he was in the enjoyment of perfect health and strength, and able to earn a livelihood for his family by manual labour.

To conclude what I have here to say of the treatment of inflammatory affections of the brain, it is necessary to mention that the diet should be strictly antiphlogistic for the first few days; it ought chiefly to consist of drinks, such as thin gruel and arrow-root; and during recovery, great care should be taken to avoid bringing up the patient's strength too suddenly. The utmost quietness is absolutely necessary in all severe diseases; but it is more particularly essential in those of the brain; and for a considerable period, patients who have recovered from a severe attack of this kind, should be kept in a very tranquil state both of mind and body. Application to business must be strictly forbidden, sometimes for several months, and great attention must be paid to diet, bowels, clothing, and keeping regular hours.

Immediately after the severity of the disease is subdued, and more frequently during recovery, opiates are often productive of great benefit, by allaying irritation, and by tranquillizing both body and mind.

In many cases of inflammation of the brain, the secretion of urine is either suspended or suppressed; but in every case practitioners should examine very carefully into the state of the bladder, as sometimes the secretion of urine is rather increased in quantity than diminished, and I have seen much distress occasioned by its retention in the bladder.

#### INFLAMMATION OF THE SUBSTANCE OF THE BRAIN.

The profession is much indebted to Lallemand, Rostan, Georget, and others in France, and to Dr. Abercrombie in this country, for many important facts concerning inflammation of the substance of the brain, and the peculiar softened condition into which the organ is reduced by diseased action.

*Symptoms of inflammation of the substance of the brain.*—Inflammation of the substance of the brain seldom exists uncomplicated; it is often the result of congestion in the vessels of the head, and is always marked by loss of balance of the circulation. Like inflammation of the membranes, there may be different shades between the acute and chronic forms; the attack being sometimes sudden, but for the most part insidious. The precursory symptoms are generally similar to those which precede inflammation of the membranes.

The functions of the brain are impaired; the patient complains of *vertigo* or *tinnitus aurium*; a feeling of weight in the head; headache; indeed Dr. Abercrombie describes this last symptom as being very severe, and as giving to the disease a peculiar character, but I cannot say that this consists with my experience. There are optical delusions, strabismus, contraction or dilatation of the pupil; difficulty is sometimes experienced in articulating words; the patient's temper is observed to be much altered, and easily irritated; the pulse may be quite natural. Through the day, the patient does not appear to be very ill, but in the night the symptoms become much aggravated. Perhaps no alarm is yet taken, till weakness is observed to affect one side of the body, or convulsions take place; and when a medical man arrives, he finds the patient affected with paralysis, and more or less coma.

Inflammation of the substance of the brain sometimes attacks a patient more insidiously. He may complain of *lumbago* and rheumatic pains in the limbs, or may be affected with vomiting or purging; the true disease is perhaps not detected till coma is decidedly marked.

Inflammation of the substance of the brain occurs in the progress of the simplest, as well as the most severe form of fever in this country; it may also take place when the body is much weakened by the long continuance of hæmorrhage. In fact, this disease occurs under circumstances as different as those already so fully described in inflammation of the membranes of the brain.

When the disease is somewhat advanced, there is considerable stupor, and more or less insensibility, without violent delirium. The power of speech is lost early, perhaps before intelligence is destroyed. The pupil still contracts, shewing sensibility of the retina. The countenance varies a little in appearance; sometimes there is an expression of severity with a frowning brow; at

others it looks stupid and vacant. The patient is observed to be deaf, and vision imperfect. At length paralysis takes place on one side of the body, but the superior extremities are more frequently affected than the inferior, and the flexor muscles of the paralyzed limb are in a state of morbid contraction. It would appear also that the limb preserves a degree of sensibility, for the moment the arm is touched to count the pulse, or any attempt is made to extend the fore-arm, a contraction becomes more violent; but towards the fatal termination of the disease, it becomes flaccid and insensible.

Lallemand thinks it important and highly characteristic, that the pain of the head and the disease of the brain be on one side of the head, and this peculiar affection of the limb on the opposite side of the body. Convulsions frequently take place, and during these attacks, the muscles of the paralyzed limb are affected. The rigidity of the flexor muscles is not always permanent, but takes place occasionally, sometimes altering with general convulsions.

A urinous smell is also said to be characteristic, but this is probably a mistake, owing to a neglected state of the bladder, or to a constant dribbling of urine which soils the bed. Constipation is a very general symptom, although occasionally an opposite state of the bowels exists. Respiration is not necessarily affected, till towards the last. The pulse is seldom much altered, till towards the termination; the French writers say it is never affected till that period, unless some other organ is diseased, but this appears to me to be a too arbitrary statement; indeed, the pulse is frequently slower than natural.—French authors also allege, that when there is violent delirium and a quick pulse, inflammation of some other organ or tissue has taken place, although Rostan states that delirium sometimes shews itself in the first period of ramollissement. The common position of the patient is upon the back.

The characteristic symptoms are, an absence of violent delirium; speedy insensibility; paralysis, accompanied by morbid involuntary contraction of the flexor muscles; a urinous smell. Cases occasionally occur in which there is a different train of symptoms, and in which paralysis and rigidity do not co-exist. Indeed, Lallemand observes, that in some cases there is no paralysis of the voluntary muscles, in which circumstances, he alleges that the inflammation has always its seat in parts of the brain which have no direct communication with the spinal marrow, viz. the *corpus callosum*, the *septum lucidum*, and the *fornix*. It is alleged, that when the paralysis is general, the inflammation occupies the *tuber annulare*; or is so extensive as to occupy a whole hemisphere; so much so, that the the other side of the brain becomes greatly compressed by the tumefaction of the diseased part.

An interesting and very fatal affection of the brain and its membranes, connected with disease of the petrous portion of the temporal bone, and a discharge from the ear, has attracted the attention of many distinguished medical authors. The disease is frequently very slow in its progress; often no suspicion of disease of the brain is entertained prior to dissection, when considerable portions of its substance have been found either in a state of softening,



or converted into pus; the membranes being partially destroyed, or very much inflamed and thickened.

Acute inflammation of the substance of the brain often terminates fatally in seven or eight days, frequently in a shorter period, but is sometimes prolonged till the third week. There is no doubt that it is a very fatal disease; but not so deadly, under proper treatment, and in persons not too aged, as is generally represented. I have seen several recoveries take place under circumstances which were at first sight most unpromising; and in five instances in particular, where all the characteristic, and all the bad symptoms described by Lallemand and Rostan, were present. In two of these cases, Dr. Kellie was conjoined with me in consultation. In a third, I had the able assistance of Dr. Abercrombie. A fourth I was requested to see by Dr. Moffit, surgeon of the 70th regiment, and a fifth I attended lately with my friend Dr. Lewins.

I shall here subjoin the particulars of the fourth mentioned case:—

J. S. aged 34. His complaints began with nausea and purging, which continued for several days, during which time he frequently complained of slight headache. On the 5th of August, 1827, after appearing to be convalescent, he complained towards evening of considerable headache, and general debility; pulse 80; face rather flushed; tongue white: pupils dilated. The head was shaved, and 36 leeches applied: and he took a laxative medicine. In a few hours he appeared to be gradually sinking into a state of insensibility; the face flushed, and the expression of countenance anxious; pulse 85; tongue white. Next morning he was found in a state of coma, lying on his back, with general paralysis; but the flexor muscles of both arms were rigidly contracted, the fingers seemed to be in constant spasmodic action, and his jaws were clenched; pulse 85, rather weak and intermitting. A vein was opened in the arm, and 36 ounces of blood were abstracted; a blister was applied between the shoulders: cold lotion to the head.

7th. Passed a disturbed night; no improvement in the symptoms; insensibility continues, and the state of the extremities is the same; urine and feces passed involuntarily; countenance has a severe expression; eyes fixed; pupils dilated, and he appears to be perfectly blind; pulse 85, and of natural strength. Ice and 30 leeches were applied to his head. *Vespere*; he has derived some benefit from the leeches, which bled profusely; the countenance has lost the expression described in the morning; he opens his eyes occasionally, and takes drink when offered to him; pulse 90, and soft. The application of ice to be continued to the head.

8th. Had a better night, and appears rather improved; the countenance has a milder expression; but the pupils are dilated, the eyes fixed, and to all appearance blind; the paralysis of the superior extremities, with rigidity of the flexor muscles of the arms, still continue, together with the involuntary action of the fingers; the lower extremities are still paralyzed, but not rigid; passes urine and feces involuntarily; pulse 95. V. S. ad  $\frac{3}{4}$ xii. and a fresh blister applied between the shoulders, the former one not having risen. The evening

report states, that the symptoms have progressively improved since the bleeding in the morning, and he is so far sensible as to ask for drink, which he appears to relish; pupils more natural; tongue white; the blister is now beginning to rise; the ice to be continued to the head.

9th. Appears better, and has in part recovered his speech, recollection, and vision; blister rose well. In the evening he was found gradually improving; had one stool since the morning, of which he gave previous notice. The cold applications omitted.

10th. Had some good refreshing sleep during the night; countenance natural; pulse soft, and although quick it is regular; asked for food, and got up without assistance to the close stool. From this time his improvement went on rapidly. In five or six days he was able to sit up in bed for two or three hours at a time; all the functions were natural; and in a short time he was able to walk about. His ultimate recovery was complete and permanent.

In the case which I saw with Dr. Abercrombie, the appearances were fully more unpromising, and the diseased state of the brain of longer continuance. For ten days or a fortnight, this patient had had symptoms which resembled the regular paroxysm of an intermittent; and it was supposed he was affected with that disease. During each attack, the functions of the brain were observed by his friends to be considerably embarrassed, and coma followed the last. In this case there was also remarkable rigidity of the flexor muscles of one of the arms, with paralysis of the extremity. The practice employed was very active, and although employed late, it was successful, but the patient's recovery was more tedious.

*Causes of inflammation of the substance of the brain.*—The causes of inflammation of the substance of the brain are the same as in inflammation of the membranes, and need not be here repeated. But it may be mentioned, that the disease is frequently produced in the substance of the brain around tumours and tubercles which may have existed for years, without occasioning much annoyance to the patient, till some accidental circumstance rendered them a source of irritation to the surrounding parts. This class of cases generally terminates fatally. I have a number of drawings and preparations which shew these appearances; and it is strange that Rostan should never have met with a case of this kind; but at page 70, of his work, he says he has no doubt that such a complication may exist. Inflammation of the substance of the brain, terminating in ramollissement, also frequently takes place round apoplectic depositions, whether small or large. I have seen it round an effusion of about four ounces of blood; in these cases the symptoms are in general rapid in their progress to a fatal termination.

*Appearances on dissection.*—When the structure destroyed is extensive, and particularly when situated in the central parts of the brain, the arachnoid coat sometimes looks dry, having lost its usual shining appearance. On making slices of the brain, more particularly in the neighbourhood of the diseased

part, its substance will shew many red points, out of which blood will ooze; the white substance of the brain presents a somewhat reddish colour; sometimes it is as red as if a pen-ful of red ink were spattered over it; occasionally there is a deep mulberry spot of a larger or smaller size.

The central parts of the brain, are most frequently the seat of *ramollissement*, viz. the walls of the lateral ventricles, the septum lucidum, and the fornix. These parts are sometimes wholly converted into a white liquid matter like cream, shewing the septum lucidum ragged and broken down, with some effusion into the ventricles. This appearance is sometimes very extensive; at others it is confined to the walls of one ventricle, or it effects the septum lucidum and the fornix. When the disease is not far advanced, the degree of softening is so slight, that it is impossible to determine whether the part has been diseased or not; but in this case we are sometimes assisted by discovering very considerable redness in the surrounding cerebral mass; at other times the softened parts is of a red colour, as if blood had been mingled with the substance of the brain itself. Some suppose that inflammation of the substance of the brain, is more frequently met with in the white substance than in the cortical. Andral thinks not. I have seen it in both, but am disposed to think it is more frequent in the white substance.

Perhaps the white liquefaction, which is most frequently seen in the *corpus callosum*, the *septum lucidum* and *fornix*, may be produced by a somewhat different cause from the red softening; which is most frequently seen, according to my observation, in the *corpora striata*, *thalami optici*, and *tuber annulare*.

Pathologists are much divided in opinion, as to whether *ramollissement* of the brain is or is not the effect of inflammation. Rostan admits it is sometimes the effect of inflammation; but asserts that more generally it is a peculiar degeneration of the brain, unconnected with inflammation, which has its own signs and proper characters. He appears to have three reasons for considering that it is not generally a product of inflammation:—1st, In the cases which terminate in this softening, the patients have not been affected with headache; 2d, Febrile symptoms have not existed; 3d, The colour of the substance of the brain often appears not to be in the least changed. Rostan's subjects were all old; he never saw the disease in a very young person, and only once in an individual under 30 years of age; but in that case there was no dissection.

Dr. Abercrombie, with a view of reconciling the opposite opinions which prevail on this interesting subject, throws it out as a probable conjecture, that there may be two causes, each of which may produce *ramollissement*; the first is inflammation, and takes place in young people; the second is in consequence of a failure of the circulation depending upon disease of the arterial system, and this occurs in old subjects. He supposes this degeneration of the brain has a close resemblance to mortification in other tissues; but this appears to be a forced analogy. The effect, upon all tissues, of inflammation in the first



stage, is to soften them,—at least this is the case with the lungs, the liver, and the spleen; and why not with the brain?

Sometimes inflammation of the substance of the brain terminates in the formation of one or more abscesses; and we frequently observe the same effort of nature to circumscribe and confine pus in the brain, which takes place in other tissues, viz. the formation of a false membrane round the diseased part.

A medical friend lately presented me with a brain, where there were innumerable small abscesses, resembling so many phlegmons, dispersed in every direction through the cerebrum and cerebellum. Some were situated on the surface of the brain and cerebellum contiguously to the membranes; others in the very centre of its substance. Some were in the white, others in the grey portion.

The pus found in abscesses of the brain, resembles the same matter found in other tissues of the body; sometimes it is quite inodorous, at others very fetid. I am not aware that any symptoms have been remarked, as indicating the formation of pus in the brain, which discriminate it from other organic lesions.

*Treatment of inflammation of the substance of the brain.*—The treatment already so fully detailed under inflammation of the membranes, is equally applicable to inflammation of the substance of the brain; but with a view of impressing upon young practitioners the danger of delay, the following case and dissection are annexed. Their perusal will serve also to shew the insidious manner in which inflammation of the brain sometimes steals on, concealed by some prominent affection in a distant part of the body. No case can better exhibit the advantage of active treatment, even when applied late,—unfortunately too late, in the present instance, to save the life of the patient.

J. H. aged 30, tall, active, athletic, and of sober habits; for several months complained now and then of severe lumbago, for which blisters had been applied with relief. On the 13th July 1827, he applied for medical advice, in consequence of a return of the lumbago, which had been very severe for several days; he became gradually relieved by confinement to bed, the application of a blister, laxatives, and occasional doses of Dover's powder; on the 3d August, to all appearance, he was very much better, but his bowels were rather confined. During the whole of that day, however, he became, according to the account of the people about him, more and more stupid, without any apparent cause. When spoken to he replied, but always as if abstracted. Pulse natural; countenance heavy, and rather vacant.

4th. Makes no complaint; reposes in one posture, on his back; appears fatuous; and when spoken to, returns a vague inconsistent answer; articulates indistinctly; both hands are in constant motion; pulse natural and soft; had two stools. Head to be shaved, and cold applied; sixteen leeches to the forehead; a blister between the shoulders. In the evening no alteration; the leeches bled well. Pounded ice has been constantly applied to the head;



pulse 80 and regular; tongue white and dry; skin moist. Passes urine and feces involuntarily.

*5th.* Had a bad night; is insensible; superior and inferior extremities paralyzed; but the flexor muscles of the arms are rigid, the fore-arms bent, that of the right arm more than the left; jaws clenched, but the lower one can be depressed a little by using considerable force; countenance pallid and bedewed with perspiration; eyes fixed, pupils dilated and immoveable; pulse 86, regular, and of natural strength; has lost the power of deglutition. In the evening, no change of symptoms, except that the countenance has assumed a severe expression. There is a strong urinous odour, owing to the involuntary passage of urine in the bed. He appears, although insensible, and having lost the power of voluntary motion in all his extremities, to feel the impression of cold disagreeable when the bed-clothes are drawn down. V. S. ad 328. The bleeding was persevered in till the pulse rose from 86 to 100, and became somewhat weaker. During the latter part of the operation he appeared to awake as if out of a deep sleep, and looked about him; and soon after was able to reply to any question by a sign, although he could not speak.

*6th.* Some time after the bleeding last night, he made signs that he wished to lie upon the right side, and upon being turned, expressed satisfaction; has since taken his drink occasionally, and put out his tongue when desired; his countenance is certainly more cheerful, and the eyes are sensible to light, but in other respects does not seem much improved; passes stools and urine involuntarily; pulse 130; skin moist; tongue white, and rather dry. Thirty-six leeches to the head, and a large blister to each leg.

*7th.* Passed a more composed and comfortable night; countenance more animated; is able to articulate, but with difficulty, and when spoken to, returns an appropriate answer; pulse 150; pupils dilated; tongue white and furred; skin moist; stools and urine still passed involuntarily. The application of iced water ordered to be persevered in. During the course of the day, the symptoms continued to improve, and in the evening his looks were more lively; the countenance had a more natural expression; had two stools during the day, and made water, of which he gave warning, and desired to be raised upon the night chair. There is still a little rigidity of the flexor muscles of the fore-arms, as well as spasmodic motion of the fingers; and both hands embrace the genital organs; pulse 140; skin moist. Had gruel and arrow-root frequently.

*8th.* Appears better to-day; has recovered in a considerable degree the use of his extremities; reposes frequently on his side; gives distinct answers, and is better able to articulate than yesterday; countenance mild; pupils less dilated; tongue moist and less loaded; pulse 150; skin natural; complains now, for the first time, of debility; and ordered to have food at short intervals. At the evening visit he appeared to be doing well, but still complained of

being weak; the pulse 130, and of moderate strength; bowels moved twice during the day; countenance natural and more lively; tongue moist.

9th. He was found in a weak, depressed, and sinking state this morning; respiration and deglutition difficult; pulse 160. Wine was ordered *ad libitum*; but he continued to sink, and died a little before midnight.

*Examination of the body thirty hours after death.*—Slight emaciation; countenance composed; considerable rigidity of the flexor muscles of the right arm. On removing the *calvarium* and *dura mater*, the brain appeared full and distended; a little serosity between the membranes; ramiform injection of the vessels of the *pia mater*, forming a complete anastomosis over the surface of the hemispheres; the whole presented a deep scarlet colour. In the cortical substance of the brain, several red spots from numerous little bloody points closely aggregated. The brain in these places softer than natural, and tore readily on separating the membranes from it. Medullary substance also presents bleeding points when cut into.

On the base of the brain the membranes are in a similar state as on the hemispheres; several ecchymosed spots on the lateral parts of the middle lobes. After removing the membranes in a very careful manner from all the central parts at the base of the brain, from the part anterior to the point of decussation of the optic nerves to the commencement of the *medulla spinalis*, a number of bright red spots were observed in different places. On the left *tractus nervi optici* a considerable spot of a bright red colour, found to penetrate through its whole depth; also several smaller spots on the opposite side. On each side of the *pons varolii*, there were similar red marks, but particularly one on the right side, of a dark mulberry colour, about the size of the thumb nail; this was examined minutely, and was found to extend deeply into the medullary substance, and to be formed by an intimate mixture of blood, with the cortical and medullary band of the *pons*. There was a considerable spot of a similar description on the right side of the *medulla oblongata*. The membrane lining the ventricle very vascular, and the *choroid plexus* loaded with blood. Nothing remarkable in the cerebellum. Spinal marrow not examined.

*Thorax.*—Strong and general adhesions on both sides between the *pleura pulmonalis* and *costalis*; particularly firm on the left side. Pericardium strongly attached to the diaphragm, and anteriorly so firmly united to the heart as to form only one body with it; the bond of union formed by a very dense, almost cartilaginous substance, varying in thickness—in some places more than one-third of an inch, in others only a few lines; the pericardium could with great difficulty be separated from it. A part of the posterior surface of the heart was unattached to the pericardium.

Mucous membrane of the stomach generally, but more especially of its great curvature, of a dark brown colour, with numerous varicose vessels running below it; in some places there were little patches with stelliform injec-

tion of the minute branches; other patches were of a uniform blackness. Intestinal canal natural. Bladder contained about half a pint of urine.

#### HYDROCEPHALUS.

THE frequency and fatality of this disease have strongly excited the attention of practitioners, with a view to discover its nature and seat. Two opinions at present divide the profession: according to one, hydrocephalus is a disease of inflammation; according to another, it is one of debility. My own opinion is, that it is most frequently a disease of inflammation; but that sometimes it may be occasioned by other causes, which shall be mentioned in the proper place.

There are several forms under which this disease appears. The division which I propose to adopt is as follows:

Acute hydrocephalus.

Chronic hydrocephalus.

Under the acute form, we meet in practice with numerous varieties; and I shall attempt to give a slight sketch of the principal.

1. Attended with severe and striking symptoms, such as fits of screaming; hot skin; quick pulse; bold expression of countenance; red face and eyes; convulsions; coma; the children dying on the third or fourth day. In such instances, I have seen the first stage terminated in twenty-four hours.

2. With symptoms very mild and insidious, so much so, that no alarm is taken for several days. The little patients complain, but this is attributed to peevishness, or to teething, till at length the parents become alarmed by the long continuance of the indisposition, together with the rapid emaciation which has taken place.

3. A third set of cases commences with gastric irritation, attended either by constipation or diarrhœa. The febrile symptoms are observed only at night. Medical men are often thrown off their guard, their attention being attracted by the more urgent symptoms connected with the state of the bowels. By and bye the child becomes quiet when allowed to rest in the horizontal posture; it grinds the teeth occasionally; and although shewing signs of some suffering, yet it never cries or becomes very fretful unless when raised. The moment the head is elevated, great impatience is manifested, and it gives vent to loud expressions of pain, which I suppose to be produced by headache or giddiness.

4. Very frequently hydrocephalus occurs during the course of other diseases, such as fevers, measles, small-pox, hooping-cough, and pulmonary affections; and not uncommonly runs through the first stage, and part of the second, before discovery is made of diseased action in the brain. Convulsions and coma take place at different periods in the course of the disease. The former is sometimes the first symptom, and occurs early in the disease, at other times not till towards the fatal termination. In other cases, coma takes place before the convulsions, and is the first alarming symptom that occurs; in fact, the

statements already made respecting inflammation of the membranes of the brain, and also of its substance, equally apply to this particular subject. The description given of the expression of countenance, the state of the pupils, the redness or paleness of the face, the state of the respiration, the mental faculties, the pulse, skin, and bowels, all apply with equal force to hydrocephalus.

*Appearances on dissection.*—In the most rapid cases, the patients are carried off before organic lesion to any extent is produced. Although the membranes of the brain may display considerable arborescent vascularity, still the effusion is in very small quantity—too small to account for death. In cases of longer standing, the effusion into the ventricles will be in greater quantity; or thickening of the membranes may be found not only where they cover the hemispheres, but likewise at the base of the brain, involving all the important parts in the centre, from the point of decussation of the optic nerves to the commencement of the *medulla oblongata*. The thickening of the membranes is produced by the intermediate deposition of tenacious lymph. The membranes have been found extensively ulcerated, and considerable portions of the brain itself in a state of *ramollissement*, in children who have died with all the symptoms of hydrocephalus; and in these cases, there is not always any considerable effusion into the ventricles of the brain. I forbear at present to allude to other diseased appearances, such as tumours, tubercles, disease of the great sinues, &c., because these more frequently produce chronic hydrocephalus, which will be noticed in the proper place.

*Pathological remarks.*—The chief point of inquiry which it is necessary to pursue, is, what is the cause of the effusion? Is it the product of inflammation? The best pathologists of the present day, consider it as proceeding for the most part from inflammatory action of the membranes of the brain; but at the same time there can be no doubt that a serous effusion is frequently the consequence of any cause obstructing, or even retarding, the circulation in the head. Thus it is believed to be occasioned by venous engorgement; and dissection affords ample proof that it is often owing to obstructions in the great venous channels in the head. Others allege that hydrocephalus is produced by debility. This is a pathological question of the utmost practical importance, because the remedies will be depletory in a certain stage of the disease according to the one view, and the opposite in *all the stages* according to the other. In order to place the subject in a clear point of view, I shall take the liberty of offering a few critical remarks upon a work by Professor Monroe,\* because it is the last published work which defends views that I conceive to be erroneous. At page 101, Dr. Monroe states, that before subscribing to the hypothesis, that the effusion in hydrocephalus is owing to some degree of inflammatory action, “it is necessary to enquire whether this disease usually occurs in persons who are disposed to inflammatory disorders at or near the meridian of life, when the human body is most liable to suffer

\* Entitled, *The Morbid Anatomy of the Brain*, 1827.



from inflammatory diseases. With regard to the first of these points, it may be observed, that hydrocephalus is so rare after puberty, when the constitution is most liable to inflammatory disorders, that Cullen, and other writers of eminence, have described it as being peculiar only to infancy. That the disease is rather to be imputed to *debility*, follows from the well known fact, that hydrocephalus is frequently a disease which may be traced to bad nursing, improper food, dentition, the sequel of the most tedious and debilitating disorders, as hooping-cough and scarlatina."

Cullen's authority is a most unlucky one to quote in the present day for the true pathology of any disease, and more particularly of any disease of the brain. In the work of this author, there are only two pages and seven lines devoted to a detail of the symptoms, causes, pathology, and treatment of all the inflammatory affections of the brain and its membranes; and all that he has said respecting hydrocephalus is comprised in three lines, in the shape of an erroneous definition!

It is a fact, that children, particularly those under two or three years of age, are peculiarly liable to inflammation of the brain, from several causes:—1. From the wonderful changes which take place in the circulation early in life; 2. The large size of the head at that period in proportion to the rest of the body; 3. The change the brain undergoes in appearance and consistency; 4. The great activity of the circulation, and the high state of irritability of the nervous system at that period of life; 5. Difficult dentition, which perpetually excites a determination of blood towards the head. Besides these causes, accounting for the frequency of the disease, something must be said respecting its fatality in infants. Children cannot tell their feelings, nor direct the attention of practitioners to the seat of the disease. Their fretfulness and peevishness are too often attributed to bad temper, to the state of the bowels, or to the irritation of the gums from the advancement of teeth; and the disease of the brain, as has already been shewn, often advances in the most insidious manner, till convulsions or coma take place; and even the latter symptom, although observed in its progress, is too often overlooked until the patients become insensible. Bad nursing and improper food, upon which Dr. Monro has laid so much stress in support of his own views, certainly tend to produce debility; but children badly nursed, insufficiently clothed, who are allowed to remain wet, and receive improper food into the stomach, are peculiarly liable to inflammation and ulceration of the bowels. They will be far more liable than healthy children to irregular determinations of blood, and, from want of vigour in the constitution, venous engorgement may take place, the vessels of the head may suffer, and the effusion may in consequence follow; perhaps sub-acute inflammatory action may be lighted up in the brain. The experienced eye of a careful observer will be able, in general, to detect the disease in the brain, although it is not announced by symptoms so violent and imposing as Dr. Monro seems to expect should be produced if actual inflammation had taken place. That venous congestion of the

vessels of the head terminating in effusion, and that inflammation of the membranes of the brain, should sometimes take place in whooping-cough and scarlatina, which Dr. Monro designates as debilitating disorders, will not surprise any who will study nature, or who will refer to the pathological descriptions given of these diseases in their proper places in this work.

Dr. Monro next asserts, that if hydrocephalus were an inflammatory disease, it ought, like inflammation of the lungs, and other inflammatory complaints, to be more prevalent in robust men, during the period of life when the human frame is most prone to other inflammations. Dr. Monro might have known, that the period of life at which inflammatory complaints most frequently occur, is in infancy and childhood, and that for one inflammatory fever, or inflammation of the lungs, or of any other organ, in robust men during the prime of life, we meet with at least fifty in infancy and childhood.

Dr. Monro has committed a mistake respecting the opinions of two distinguished French pathologists. "If it be supposed, (says Dr. M.) that hydrocephalus is always connected with inflammation of the brain; and that inflammation gives rise to the *softening* of that organ, which is the favorite opinion of Lallemand, Rostan, and others; in that case the brain should be found *invariably* in a softened state, which is not consonant to my observations." But I have already shown that modern pathologists do not assert, that the effusion is *always* caused by inflammation; it is sometimes produced by venous congestion, and by any mechanical cause impeding the circulation. Neither Lallemand nor Rostan attribute the softened state of the brain to inflammation of the *membranes*, which Dr. Monro appears to confound with inflammation of the substance of the brain, and who has also attributed to Rostan an opinion *quite contrary* to that which Rostan actually maintains. At page 104, of Rostan's work already quoted, he explicitly states, that although softening is occasionally produced by inflammation of the brain; yet, that it sometimes takes place unconnected with inflammation, and is a peculiar degeneration, which has its own signs and proper characters.

At page 103, Dr. Monro further urges, that, "If inflammation of the brain had given rise to this species of hydrocephalus (acute,) the attack of the disease should be sudden and well-marked, and its course rapid, like to that of phrenitis; whereas the origin of the disease is generally not well marked; indeed so much so, as often to escape the notice of the parent, and even that of the experienced physician." And he further states, that "It is admitted, even by those who impute hydrocephalus to an inflammation of the brain, that the symptoms of phrenitis are well marked, whereas those of hydrocephalus are often very obscure." It has already been shewn how very insidious inflammatory affections of the brain are even in adults, they cannot be more so in young subjects; but the reader shall see what Cullen himself says on phrenitis in his "Outlines," at page 103. "Many of the symptoms by which this disease (phrenitis) is most commonly judged to be present, have appeared when from certain considerations it was presumed, and even

from dissection it appeared, that there had been no internal inflammation, and, on the other hand, dissections have shewn, that the brain had been inflamed, when few of the peculiar symptoms of phrenzy had before appeared." And Dr. Monro concludes, that if acute hydrocephalus be owing to an inflammatory state of the brain, "there ought to be no distinction as to the symptoms, origin, progress, and consequences of phrenitis and hydrocephalus." To make the statement still stronger, he quotes Cullen's erroneous definition of phrenitis, and then states with great self-complacency, that "The symptoms of this species of hydrocephalus do not correspond with the above definition."

"One of the most striking features of inflammation of the brain, (says Dr. Monro, at page 104,) is the state of the pulse; but that character is also wanting in hydrocephalus; for the state of the pulse is *widely* different from that of a person afflicted by apoplexy or inflammation of the brain. It is not full as in the former, or *hard* as in the latter. It is no doubt quick, as in other diseases which are the effect of debility. Besides, no author, who has described the symptoms of phrenitis, has stated that the pulse becomes slower some time after the commencement of the disorder." It is almost unnecessary to comment upon the erroneous statements made in these passages; but this opportunity may be taken to mention, that Morgagni has clearly shewn the great varieties of the pulse in acute diseases; and there are few practitioners of the present day, who are not well acquainted with the varieties of the pulse in cases of affections of the brain. Dr. Abercrombie, in giving a general view of the symptoms which indicate inflammatory affections within the head in adults, makes the following observation at page 12. "The pulse is about the natural standard or below it, frequently about 60." And again; "The pulse having continued from 70 to 80 through the whole course of the disease." After alluding, at page 14, to the circumstance of the pulse becoming slower some time after the commencement of the disease, he observes: "As the pulse falls, the patient is disposed to sleep, this is perhaps considered as favourable; it falls to the natural standard, he then sleeps almost constantly; and in another day this sleep terminates in coma. The pulse then begins to rise again; it rises to extreme frequency, and in a few days more the patient dies."

Is it not a curious circumstance, that Cullen, in the seventy lines that he has written on inflammatory affections of the brain, does not notice the state of the pulse; neither does he mention it in his definition?

At page 110, Dr. Monro endeavours to establish an invariable connection between hydrocephalus and dropsy, *both depending on debility*; now, if this were true, children ought to be very liable to dropsical affections in other parts of the body, which is decidedly not the case; but, nevertheless, looking pathologically at these affections, there is a strong analogy. Dropsy sometimes arises from inflammation; so does hydrocephalus. Dropsy sometimes arise from morbid alterations in the structure of the heart; so does hydrocephalus. Dropsy is sometimes produced by disease of the lungs, and particu-



larly bronchitis; so is hydrocephalus. Dropsy in the belly frequently depends on diseases of the liver impeding the circulation; so does hydrocephalus occasionally depend on obstructions in the venous system of the head. Dropsy sometimes depends on the diseases of the kidneys; so does hydrocephalus. Lastly, dropsy is sometimes cured by bleeding; so is hydrocephalus!

*Treatment of acute hydrocephalus.*—If so much discrimination is required in the treatment of inflammation in the brain of adults, still more is necessary in treating the disease in young subjects. With respect to bleeding in particular, much depends upon the duration of the disease, the age and peculiarities of the constitution of the child; and whether the disease has taken place subsequent to other disorders, in the course of which the child has been much weakened. But if called early, no lesion having as yet taken place in the brain, and the child being above two years of age, I have no hesitation in opening a vein, if one is any where to be found. This recommendation is urged after considerable experience of its advantages, in controuling diseased action in the brain at an early period of the disease, and from which I have never seen any bad results. It would appear that the danger of bleeding children from a vein is far overrated. In two cases, the bleeding produced syncope, and yet no bad consequences followed. Capuron says, at page 495,\* “It is sufficiently proved, that general and local bleeding are the means of fulfilling the first of these two indications, above all in the beginning, where every thing announces a movement of re-action towards the head; apply leeches round the neck, open the jugular vein, or the temporal artery, and be not, like Dr. Odier, afraid of breaking down the vital powers; these are too energetic, particularly during the first period when they tend to concentrate themselves towards the head, to irritate the brain, to produce a turgescence of its vessels, to leave traces of inflammation, and to produce effusion.” It is impossible to give any particular direction as to the quantity of blood which ought to be abstracted. The operation is to be performed only when there is high excitement, and in the earliest stage of the disease; under other circumstances, leeches must be applied to the feet, which may be afterwards placed in warm water, to encourage the flow of blood; and when it is wished to prevent further loss, pressure can be conveniently and effectually applied. A great error is committed by practitioners allowing the effect of the first bleeding to be entirely lost, and not following it up, either by taking an additional small quantity after a short interval of two or three hours, or applying leeches. Another error is frequently committed by allowing leech-bites to drain blood from the system by slow degrees, thereby producing great weakness without effecting any diminution of the diseased action. Antimony is of signal benefit in these cases. Cold applications to the head, purgatives, and all the other remedies mentioned so fully when treating of inflammation of the membranes of the brain, must be employed according to circumstances. The gums should be always carefully examined, and lanced if necessary. Mercury has been highly

\* *Traité des Maladies des Enfants jusque’a la puberté*, 1820.



extolled in the treatment of this disease ; but principally by those who regard it as a disease of debility, terminating in dropsy, and not one of inflammation. There are only two classes of cases in which this remedy ought to be trusted to. 1. Those in which we are called too late to employ the most powerful antiphlogistic means ; and, 2. Those in which these means have been employed, without decided amendment.

In sub-acute cases, as well as in those of an acute nature, after the force of the disease has been subdued by the appropriate remedies, I have seen very beneficial results from the production of a pustular eruption on the head, with the tartrate of antimony ointment. This is only following the steps of nature, it having been often observed that threatening symptoms have subsided upon the occurrence of porrigo, or some other cutaneous eruption. When the disease has advanced to its last stage, it has been proposed to draw off the water by tapping the brain. But the water is not the disease ; and, therefore, unless the diseased action were to be cured, and the healthy condition of the brain restored, it is of no use to draw off the water ; not to speak of the danger and uncertainty of such an operation, even when performed by the most skilful hands. Whatever good effects are represented to have been produced in chronic cases of hydrocephalus, no benefit can be expected from such an operation in the acute form of the disease.

#### CHRONIC HYDROCEPHALUS.

SOMETIMES in young subjects, acute hydrocephalus runs into the chronic form, and constitutes one variety.

A second variety, the effect of very slight inflammatory action, may be very insidious and slow in its progress. A child so affected shews marks of suffering, with loss of flesh ; but there are no decided symptoms, till perhaps a stranger remarks his head to be much larger than it ought to be. The head may go on enlarging slowly for a number of years, remarkable instances of which are on record ; or if the disease attack a very young subject, the bones of the head separate to a considerable extent.

A third variety is sometimes observed, in which the head, perhaps very large originally, does not become larger during the course of the disease ; but the bones are found to be remarkably thin, and sometimes after they have become so, the sutures are so much weakened, and their mechanism so much altered, that slight separation of the bones is observed.

Children affected in the manner described in the first variety, seldom live so long as the others, and in the third variety, shorter than those in the second, who may live for twenty or thirty years ; and it is an interesting pathological fact, that in all the varieties death is often occasioned by some other disease, very frequently ulceration of the bowels, sometimes phthisis pulmonalis, and occasionally an inflammatory affection of some of the tissues of the lungs.

The symptoms vary much ; and in some cases, it is difficult to conceive how children under such extensive disease preserve their intellectual faculties

Occasionally the sense of sight, hearing, and taste are destroyed permanently, or only for a time; in others, one sense only is affected; in others, two or more, the rest remaining entire. Emaciation is a common symptom, as is also some degree of giddiness in the erect posture. The bowels are in different conditions; but when diarrhœa is intractable, and in some cases even when very slight, I have found after death extensive ulceration in the mucous membrane of the bowels. Strabismus is frequently, and opacities of the cornea are occasionally, seen in this affection. In some instances, convulsions are very violent, many of the muscles remaining constantly rigid; the convulsions may be general, like those of the epileptic kind, with foaming at the mouth; or they may be partial, affecting one or more of the extremities, or the muscles connected with respiration, or perhaps only those of the face.

*Appearances on dissection in chronic hydrocephalus.*—The membranes of the brain are generally very vascular, the veins sometimes large and turgid. In three instances of chronic hydrocephalus, I found extensive traces of disease in the longitudinal sinus; in one, it was almost obliterated by the thickening of its coats; in two others, the area of the vessel was very much diminished, partly by thickening of its coats, but principally by deposition of lymph in its cavity partially organized, and requiring some degree of force to separate it.

The collection of water in the ventricles sometimes amounts to several pounds; and in cases where the effusion is considerable, the convolutions of the brain become more and more obliterated, from the distension occasioned by the fluid, and in some instances I have seen them completely unfolded. The ventricles will be found largely developed, the lining membrane occasionally vascular, and frequently thickened; I have seen this membrane as thick as the rind of an orange, and easily separated from the surrounding brain, which was softened. The brain itself is occasionally of a natural consistence; at other times it is softened. In some cases, particularly where the convulsions have been violent, considerable effusions, presenting more or less of the appearance of lymph, have been found, involving the central parts at the base of the brain.

In some instances, the effusion has been seen external to the brain itself, which has been described as a variety, under the term “External Hydrocephalus.” Not meaning to deny the existence of such a case, I feel convinced, from my own examinations of the brains, where the effusion appeared to be external, that in fact it was owing to the fluid having found its way out of the ventricles, and distending to a great degree the arachnoid coat alone; one instance of which occurred to me a few years ago, and another lately.

*Treatment of chronic hydrocephalus.*—In the treatment of cases of this nature, the chief object of the physician is to palliate symptoms as they arise, by the occasional application of leeches, the frequent use of blisters or issues, and the counter-irritation produced by tartar emetic sprinkled upon the surface of a pitch plaster; attention to the bowels, regulating the diet, together with the administration of an occasional small opiate. Mercury has been

much praised in this form of the disease, and although I have never seen any benefit arise from its employment, yet there can be no objections, in any case, to a fair trial of its powers.

When considering the treatment of acute hydrocephalus, I stated my disapproval of the irrational practice of puncturing the brain to draw off the effused fluid ; but I will not venture to speak so decidedly against the practice in chronic cases. If the operation of tapping the brain is ever to prove successful in producing a cure, it must be in chronic cases, where an inconsiderable quantity of fluid is effused, or where there is no considerable organic lesion. Nevertheless, experienced pathologists will, I am persuaded, join me in stating that such cases are exceedingly rare, so rare as not to be met with oftener than once in a thousand instances !

Pressure has been highly extolled ; of course it must be employed after the operation of tapping. Similar remarks to those already made respecting the results to be expected from that operation, are applicable to the effects to be expected from pressure.

## CHAP. III.

### DISEASES OF THE SPINAL MARROW.

INFLAMMATION of the spinal marrow and its membranes; and under this head I shall at present include tetanus—trismus—trismus nascentium—and hydrophobia.

---

#### INFLAMMATION OF THE SPINAL MARROW AND ITS MEMBRANES.

It has been considered expedient to treat of inflammation of these tissues together, because it does not appear to be established, that inflammation in one texture has such distinctive characters as to enable us to distinguish inflammation of the membranes, from inflammation of the substance of the spinal marrow. We are indebted for many important observations on this subject, to several French writers, and Dr. Abercrombie; nevertheless, systematic authors must be slow in drawing practical conclusions from them, until they be more numerous, and more fully elucidated.

*Symptoms of inflammation of the spinal marrow and its membranes.*—The chief symptoms of inflammation of these parts are stated to be pain in the back, occasionally shooting upwards and downwards, being very severe in one spot, increased by motion, but not by pressure, unless it be connected with caries of the bone; rigors; some degree of fever; headache; slight incoherency, and even coma occur. In some cases dysuria takes place, in others, retention of urine; convulsions, sometimes general, at other times partial; rigidity of the muscles of the back and neck. Sometimes the body is bent backwards, in the state called *opisthotonos*; in some extremely rare cases, the body is bent forwards, in the state termed *emprostotonos*. Sometimes there is locked-jaw, and occasionally complete tetanus. Sometimes there is great pain or tingling in the extremities, particularly in the lower; and occasionally paralysis, not only of the lower, but of the upper extremities. When the superior extremities are affected with pain, tingling, convulsions, or paralysis, it is stated that morbid appearances have been found in the cervical region. In some instances, the limbs are permanently contracted, rigid, and painful; while in other cases they are flaccid, and without pain. The muscles of deglutition are also occasionally affected, sometimes so much so, that there is a dread of swallowing any fluid, and in this way the disease



simulates hydrophobia; and there is reason to believe this class of disease has been often mistaken for the latter. The functions of the stomach and bowels are deranged; at first, the bowels are constipated, and moved with difficulty, but towards the last, stools are passed involuntarily, as is the urine. The tongue presents different appearances; from being loaded and moist, it becomes dry and hard. The pulse is various, and has no particular character. The faculties of the mind, generally speaking, are not much impaired, although there is occasional incoherency. Some allege, that it is only when the disease is situated high in the cervical region, that the functions of the brain are impaired. When they are permanently disordered, and particularly if blindness and deafness take place, it may be concluded that the brain is also affected. The respiration, in many cases, becomes slow as the disease advances, so much so, that there may be so few as ten, seven, five, or even three inspirations in a minute; occasionally death is suddenly produced by asphyxia.

Sometimes the disease terminates fatally in a few days, but the general course of its acute form is from ten to fifteen; it would appear, however, that it may exist in a chronic state for an almost indefinite period. In the practice of French physicians, we are told, this disease has been very generally fatal; but I have seen a number of severe cases treated successfully, which, there was every reason to believe, were inflammations of the spinal cord and its membranes, but by means very much bolder than that which is generally pursued on the opposite side of the channel. If the disease be produced by caries of the vertebræ, or by blows causing considerable injury to the bones, it will generally prove fatal, at least much more frequently so than when it occurs spontaneously. Probably many affections which now go by the vague name of nervous, and many of the painful sensations in the chest and abdomen, experienced particularly by females, will hereafter be found to depend upon some functional derangement, or slight disorganization of the spinal marrow and its membranes.

*Causes of inflammation of the spinal marrow and its membranes.*—This disease may be produced by the application of cold, particularly in damp situations; fatigue; and every other circumstance which may upset the balance of the circulation, and produce venous congestion in different organs; as also by blows; caries of the vertebræ, and tumours growing from different parts within the vertebral canal.

*Appearances on dissection in inflammation of the spinal marrow and its membranes.*—With regard to the appearances on dissection, it may be remarked, that the description given of the morbid appearances found in the brain and its membranes, will equally apply to the spinal marrow and its membranes. The effusion will be found beneath the arachnoid. The reader must keep in mind the observations and experiments of Magendie, who appears to have established, that in a state of health, there is always a

considerable quantity of serous fluid in the spinal canal; and that the spinal marrow is harder than the substance of the brain.

*Treatment of inflammation of the spinal marrow and its membranes.*—This consists in bleeding, generally and locally; the frequent administration of purgatives; the application of counter-irritation; and attention to the bladder, to prevent it from being over-distended. In this, as in all diseases affecting vital organs, the life of the patient depends upon the timely application of the proper remedies, which must be made assiduously. Some cases, thought to be of the nature of those now under description, have been successfully treated, by applying twenty or thirty leeches, after copious general bleeding, and by re-applying them, (even in increased number), to the part chiefly affected, till the disease was subdued; and the exhibition of repeated doses of calomel and opium.\*

## TETANUS.

THIS is a disease characterized by tonic convulsions, and, for the most part, by rigidity of the affected muscles. Sometimes the muscles which close the jaws are solely affected, with perhaps those of the neck, when the disease is usually termed *locked-jaw* or *trismus*. When the muscles of the back are convulsed and contracted in such a manner as to make the body be supported by the head and the heels, the trunk being arched, the term *opisthotonos* has been applied. When the body is bent in the opposite direction, the term *emprosthotonos* has been used. In a practical point of view, these varieties may be considered under the general term, tetanus.

An important distinction, however, must be made between the symptomatic tetanus, which is so frequently the result of wounds, and that which comes on without any assignable cause, and which has been denominated, in contradistinction to the other, idiopathic. It affords me much pleasure to hand to the surgeon who boasts of the superior success of his art over that of physic, the traumatic tetanus, in the hope that he may be more successful in discovering its true pathology and treatment, than his wise ancestors; and I shall now proceed to consider that form of the disease which has been called idiopathic, and afterwards make a few observations on *trismus nascentium*.

*Symptoms of tetanus.*—Tetanus has no precursory symptoms which can be depended upon; sometimes patients complain of rigors, or merely chilliness, with pain and stiffness of the muscles of the neck and shoulders, which extend by degrees to those of the jaw. By and by rigidity of the muscles takes place, accompanied by painful spasms; the jaws are immovable, and if not yet completely shut, soon become so tightly clenched that it is impossible to separate them; deglutition is difficult, at length impracticable; the faculty of the speech is impaired, and at last the power is altogether destroyed.

\* The last work written exclusively upon this subject, is that of M. Oliver of Angers, entitled, "De la Moelle épinière et de ses Maladies."

ed, although intelligence may remain; the countenance is exceedingly anxious; the oppression at the præcordia is great, together with a tightness and suffocation.

The spasms sometimes extend from the face and neck to the back, from whence they spread to the rest of the muscles of the trunk, abdomen, and extremities, the muscles always remaining rigid; but their convulsive action comes on at regular intervals. In the most severe cases, the paroxysms are violent, and the spasms succeed each other very rapidly. The oppression at the præcordia increases as the spasms extend from the muscles of the jaw and neck to those of the trunk, when there come on a severe sense of constriction in the chest, and a violent darting pain extending from the lower part of the sternum to the spine, the return of which the patient constantly dreads. The mental faculties, for the most part, remain sound till the near approach of death; which circumstance gives the disease a distinguishing character from epilepsy. The pulse is generally little affected in tetanus, even in the traumatic form of the disease; occasionally, however, it is quick, particularly towards the fatal termination. The functions of the lungs seem to be seriously impeded; respiration being very rapid, or slow, not exceeding three, five, seven, or nine inspirations during a minute. The skin is seldom hotter than natural, that is to say, there is no feverish heat; the body is frequently bathed in perspiration, which, as the disease advances, is converted into a cold, clammy sweat. The functions of the stomach and bowels are sometimes unaffected. Deglutition is in many cases very difficult which may be partly owing to the tough phlegm lodged about the fauces in considerable quantity, and partly, also, to the spasmodic action of the muscles. Greater difficulty is experienced in swallowing fluids than solids, which the patient is apprehensive will produce complete suffocation; and, if he is a person of irritable temper, he may perhaps shew a marked dislike to fluids when presented to him, which will give an appearance of *water-dread*. Should such an individual have received a bite from a dog, even twenty years before, he will be said to be affected with hydrophobia; and I am convinced, after much patient investigation, that many of the cases recorded as pure hydrophobia, were nothing more than trismus, conjoined with difficulty in swallowing fluids. Tetanus is a disease which is very rapid and fatal in warm climates, terminating as early as the third day; in this country, it is seldom fatal till between the fifth and tenth. The danger of the disease is to be calculated by the frequency, violence, and duration of the convulsions.

*Causes of tetanus.*—In warm countries, it is believed that the black population is more liable to tetanus than the white. Individuals possessing what is termed a nervous temperament, are perhaps more subject than others.—Long continued fatigue, together with exposure to cold damp air, conjoined with the excessive use of ardent spirits, are the causes usually, and perhaps truly assigned.



*Appearances on dissection in tetanus.*—Many distinguished pathologists believe that tetanus has its seat in the spinal marrow, and that its nature is inflammatory. There can be no doubt that there is a striking resemblance between the symptoms of tetanus, and those produced by inflammation of the membranes of the spinal marrow. Tetanus, well marked in its symptoms, however, has proceeded to a fatal termination, and upon the most minute examination no morbid appearance could be discovered, either in the membranes or in the spinal cord itself. And on the other hand, inflammation and other organic lesions of this part have been found upon dissection, in cases where no symptoms of tetanus had manifested themselves. Others allege that the ossific scales found on the surface of the arachnoid membrane of the spinal marrow, are the cause of tetanic convulsions; but I have frequently seen these ossifications where symptoms of tetanus never appeared. The lungs have been often found loaded with blood; but this can scarcely have any connection with the causes of the disease; it is perhaps only an effect of the impeded respiration. It is said that the cardiac portion of the stomach and the lower end of the œsophagus have always been found inflamed, and attempts have been made to connect the occurrence of the disease with this appearance; but were this a cause of tetanus, it would be a disease of very frequent occurrence in these latitudes. A similar remark applies equally to worms having been occasionally found in the alimentary canal, but they may possibly give rise in some constitutions to symptomatic tetanus.

*Treatment of tetanus.*—After a careful review of the cases recorded in the annals of physic, no plan of treatment, hitherto employed, seems to have been attended with much benefit. Bleeding, purging, cold and warm bathing, all the most powerful narcotics, and mercury, have each had its warm supporters; but with little success. The following is the plan which I would adopt in cases of tetanus, including those of locked-jaw, in previously healthy subjects. If called early, the strength being good, and the pulse not very rapid, I would bleed from the arm, till the near approach of syncope; by this means, plethora will be reduced—any determination of blood will be altered—and any tendency to inflammation, if such exist, so far at least subdued. But V. S. ought not to be employed, if the disease had made much progress, or if the pulse were very rapid, the tongue dry, and the strength reduced by the diseased action. In an hour or two after the general bleeding, blood should be abstracted locally in the course of spine, either by applying a considerable number of leeches, or by means of cupping-glasses, which ought to be repeated from time to time according to circumstances. The bowels must be kept freely open; but much mischief has been done, and the spasms rendered more violent, by the constant exhibition of drastic purgatives. Tobacco enemata have long been used,\* and have of late years been again strongly re-

\* Vide Observations by Mr. Duucan, 11th vol. Ed. Med. and Surg. Jour. p. 193.



commended in this disease by Dr. O'Beirne, of Dublin. Opium in 5-grain doses ~~may~~ be exhibited every 2d or 3d or 4th hour, according to circumstances; or what is better still, a hundred drops of laudanum, sixty or seventy of Battley's sedative solution, or half-grain doses ~~of~~ of morphia. From the beneficial effects produced by colchicum ~~in~~ <sup>in</sup> catism, in both of which the nervous system is very much ~~affected~~ that medicine might be conjoined with opium. Patic. ~~for~~ <sup>for</sup> tetanus appear to bear immense doses of opium; many cases are recorded, in which twenty and thirty grains have been exhibited daily, and persevered in for two or three weeks without causing any apparent bad consequences. Mercury has been much in favour among medical men in the treatment of this disease, and it has been asserted that those patients have recovered in whom salivation had been excited; but there is a great deception likely to arise from this statement. It is difficult to excite this action in violent diseases, which run on rapidly to the destruction of life; the very severe cases run through their course in too short a period of time to allow the mercury to act, therefore it can only be in the slighter varieties of the disease, in which the action of the remedy can take place, and which might be cured by other means. The remedy, however, has been too strongly recommended to be passed over. A large blister should be applied to the spine. As to cold and warm bathing, it may be shortly stated, that I have no faith in either, as the least motion will very generally produce a paroxysm. The strength must be carefully watched, and nourishment, with or without a little wine, should be given at short intervals, long before there is any decided appearance of sinking. When the stage of collapse approaches, stimulants must be had in course to, and there can be no doubt that their judicious exhibition has occasionally saved lives. Among other remedies which have been recommended, I may mention assafetida, musk, camphor, valerian, bark, sudorifics, ammonia, carbonate of soda, &c.

#### TRISMUS NASCENTIUM.

I have now to say a few words respecting the locked-jaw of infants. It is a disease seldom seen in this country, and is more peculiarly an affection of negro children in warm climates; attacking them between the 7th and 15th day after birth, seldom later than the 17th, and, in general, neither preceded nor accompanied by any febrile movement. The disease steals on in the following manner. Children lose flesh and strength, and are affected with drowsiness and frequent yawning; they suck with increasing difficulty, and at last are unable either to suck the breast or to swallow; the skin gradually puts on a yellow appearance; by and by the jaw is observed to become stiff, its muscles rigid; general convulsions sometimes precede death, which often happens in two or three days from the first attack.

The true pathology of this affection has evaded the efforts of all inquirers. It has been attributed to irritation, produced by tying the naval-cord, to the

irritable state of the umbilicus upon the separation of the cord at the natural period; while others maintain, that it is owing to some diseased state, or retention, of the meconium.

No treatment hitherto tried appears to have had much effect in controuling the disease after it is fairly established; but that which has been found most beneficial, is the application of turpentine to the naval.

If the child survive the ninth day without the occurrence of any symptoms of the disease, it is considered safe. At one time, in some of the West India Islands, this disease was so common and so fatal, that on an average, two out of three infants perished.

## HYDROPHOBIA.

This is a disease happily of rare occurrence, particularly in this country; and as already mentioned, it is probable it is still of rarer occurrence than is generally imagined, being frequently confounded with tetanus, when, along with that disease, there is a dread of liquids; but there can be no doubt that such an affection does exist. I once saw a patient many years ago, but before I was able to judge of such matters for myself, who was said to be affected with hydrophobia; it terminated fatally, but I have never met with a medical man who could say he had seen even one case in this country. Hydrophobia is produced by a morbid poison generated in the dog, wolf, fox, and occasionally, although rarely, in the cat. The poison appears to be mixed with the saliva; and the characteristic of the disease produced, is a dread of liquids. That such a disease does exist, and that it is capable of being communicated from one animal to another, has been satisfactorily proved by experiments performed in the year 1813, by Magendie and Breschet. The saliva of a man affected with hydrophobia, was collected and inserted beneath the skin of two dogs, which were at the time in excellent health, and in thirty-eight days one of the two dogs became rabid, and bit two others, one of which died in a month after of the same disease. Experience has proved, that all the animals bitten are not necessarily affected with hydrophobia. Of this fact, Mr. Hunter gives a striking example. Twenty persons were bitten by one rabid animal, of whom only one suffered. It is generally admitted, that the state of the mind has a powerful influence in the production of disease; and it is probable, that hydrophobia may be sometimes produced by the constant agitation into which timid nervous persons are thrown after having been bit. Some allege, that the virus may remain dormant in the system for years before the disease appears; but the general opinion is, that it shews itself in between twenty and sixty days from the occurrence of the accident. During this period there is no constitutional derangement, unless the individual is depressed by fear.

*Symptoms of hydrophobia.*—The disease is ushered in by rigors, languor, lassitude, severe mental depression, irritability, anxiety, restlessness, and watchfulness. Occasionally a shooting pain is felt in the neighbourhood of the injured

part. As the disease advances, the anxiety of the countenance, the irritability and watchfulness, the oppression at the præcordia, the sense of contraction of the chest, increase; slight tremors affecting every part of the body appear, and difficult deglutition; a considerable quantity of viscid phlegm is observed in the mouth and fauces; stiffness in the jaws now and then takes place; as also general spasmodic paroxysms, resembling those in tetanus, but it is asserted, that on careful examination, the convulsions will be found to be of the clonic kind. In pure hydrophobia, the body is said to be affected more with tremors than convulsions. At length the water-dread increases so much, that the sight of any thing liquid, or merely an allusion to it, produces a paroxysm of tremors, at the time too when the thirst is very urgent. On some occasions, the dread only takes place when the patient attempts to drink. As the disease goes on advancing, the least noise or motion made by any of the attendants produces a paroxysm, as well as every effort on the part of the patient either to move or speak. He manifests increasing terror and watchfulness. As in tetanus, the mind generally remains entire till towards the termination of the disease. The thirst and sense of constriction increase in urgency: respiration becomes painfully hurried and short; the pulse and heat of the skin are generally about the natural standard; but the former increases in frequency, while the latter sinks towards the fatal termination, and the surface is covered with a clammy sweat. Debility, in the proper sense of the term, is scarcely ever present till toward the last stage, when the eye becomes hollow, and the countenance pale and haggard.

The duration of the disease in slight cases is about a week, but in those of a more violent nature, two or three days. Mr. Marshall informs me, that the last case of this disease which came under his notice, died in twenty-two hours from the occurrence of the first suspected symptom. Two hours before death, his patient eat bread and jelly with an appetite. Another case, which Mr. Marshall attended, terminated fatally in a shorter period.

*Appearances on dissection in hydrophobia.*—A great many discordant statements will be found in different works, respecting the seat of the disease. Some pathologists, after the most careful examination, have not been able to discover any morbid appearance whatever, in any part of the body; while others have seen vascularity in the pharynx, œsophagus, the cardiac extremity of the stomach, and even in portions of the intestinal tube, particularly the ileum; and these parts have been even in a gangrenous condition. Magendie found no diseased appearance in the brain. Professor Trollet of Lyons, published a work on this subject in the year 1820.\* He seems to have had ample experience in the treatment of this dreadful malady; and the following are the diseased appearances which he discovered on dissection in different cases. Vascularity and inflammation of the mucous membranes of the air passages, which was coated over with a frothy matter, (according to his view,)

\* Nouveau Traité de la Rage.

of a *peculiar* kind, and which he supposes, to contain the specific virus; the lungs were gorged, and apparantly emphysematous; in some instances air was discovered in the heart, and large blood-vessels; the blood was black, uncoagulated, and had an oily appearance. This gentleman found the membranes of the brain, and more especially the *pia mater*, very vascular.

One fact has been established by all the individuals who have investigated this disease,—that the salivary glands, and the surrounding cellular substance, have always been found healthy.

*Treatment of hydrophobia.*—Bleeding even to syncope, and large doses of opium, have been employed, together with camphor, musk, mercury, and almost every other potent remedy in the *materia medica*, and without success. To shew the extent to which bleeding has been carried, I may mention a case treated by Professor Trollet. The patient was bled to the extent of five pounds, when the water-dread first appeared. In a few hours afterwards, the operation was repeated to the extent of eighteen ounces, when syncope again took place. In four hours subsequently to the last bleeding, fourteen ounces were abstracted; and in four hours after that, the patient died; being twelve hours from the commencement of hydrophobia. It was remarked, that the symptoms became more aggravated after each bleeding. Notwithstanding the result of this and other cases, I would still be disposed to recommend a similar plan of treatment to that I have proposed in tetanus at page 443.

The injection of tepid water into the veins has been practiced without success. But from the experience we have had of the safety of throwing even ten pounds of saline fluid at a time into the vascular system in cases of epidemic cholera, there is little doubt that the practice in hydrophobia will be conducted with greater boldness, and probably will be attended with better effects.



## CHAP. IV.

### EPILEPSY—HYSTERIA—CHOREA: NEURALGIC PAINS.

---

#### EPILEPSY.

THIS is a convulsive disease which effects the voluntary muscles, and is characterized by the suddenness of the attack, loss of sense and voluntary motion.

*Symptoms of epilepsy.*—The fit generally comes on suddenly, sometimes with a frightful shriek, and the patient falls down, and immediately loses sense and voluntary motion; convulsions follow on the instant; the muscles on one side of the body are generally more violently affected than those on the other; all the muscles connected with respiration, and those of the face, are always involved. The pupils are sometimes dilated; the eyes roll about in a most frightful manner, and at last become fixed. The face is frequently of a dark purple colour, but occasionally it is pale and haggard. The tongue is sometimes thrust with violence out of the mouth; it is occasionally caught between the teeth, and severely bitten; a considerable quantity of phlegm is collected in the mouth, and expelled with violence in a frothy state, with considerable noise. The respiration is always hurried and laborious, which is often produced or increased, by patients breathing through the clenched teeth, and the frothy saliva. The pulse varies much, in some cases it is very rapid, in others preternaturally slow. The affected muscles are not constantly rigid, but occasionally become relaxed, and then rigid again; this is the state termed by nosologists “clonic spasms.” The duration of the attack varies from a few minutes to half an hour; the convulsions cease; the face becomes pale; and the patient may recover his senses, and power of voluntary motion, either immediately, or very slowly; his judgment is, in general, for a time impaired, and he is left debilitated, with the feeling of weight in the head, or actual headache. The paroxysm sometimes terminates by violent vomiting. Occasionally it happens that one fit succeeds another, till the patient becomes comatose, and dies; but comparatively, few die during a fit, unless the disease has existed for a considerable period of time.

An epileptic paroxysm is occasionally preceded by a peculiar and painful sensation in a distant part of the body, as in the fingers, toes, or some part

of the abdomen, and is described as proceeding in a gradual manner, like something creeping towards the heart, in other cases towards the head, when the convulsions commence. This is called the *aura epileptica*. The attack is also occasionally preceded by certain symptoms which announce its approach to the patient, but which he has usually no time to communicate; these are headache, imperfect or erroneous vision, sparks of fire before the eyes, and *tinnitus aurium*.

Females appear to me to be more liable to this disease than males; and it is not entirely confined to man. I have seen it in horses,—in dogs, particularly of the Newfoundland breed,—in poultry and pigeons.

*Causes of epilepsy.*—Epilepsy appears to be occasionally hereditary. I have known it to be the cause of death in both father and son; but it is more frequently an acquired disease. Idiots are often also epileptics; and insanity frequently terminates in epilepsy. Fright is said to be a cause; and every kind of mental agitation. Thus, it was formerly called the electioneering disease in England, because it so often occurred at such periods from violent mental excitement, aided, however, by another cause, the abuse of intoxicating liquors. Indigestible articles of food and constipation, by occasioning irritation in the stomach and bowels; the irritation produced by worms in the intestinal tubes, are also very frequent causes; as is likewise excessive venereal indulgence. This complaint has been attributed to tumors in the brain, and projections of bone arising from the inner table of the skull.

*Appearances on dissection in epilepsy.*—A great variety of organic lesions have been discovered in the brain and spinal marrow of epileptics. Congestion of the vessels of the brain; thickenings and indurations of the membranes; inflammations; exostoses: tubercles and tumours of different kinds, and in different parts of the brain—sometimes situated externally to the membranes; at others, occupying the very centre of the cerebral mass. Some assert, that these disorganizations are exclusively confined to the cerebellum; others to the spinal marrow; but these are to be regarded only as assertions made by individuals, whose observations have been made upon a limited scale. It must be observed, that any one of these morbid appearances may exist, and even several of them combined, without producing that combination of symptoms which constitutes the disease under consideration; and further, that in some instances, upon the most careful examination, no morbid appearance whatever has been discovered, either in the brain or spinal marrow. Worms have frequently been found in the intestines; and this has led several pathologists to assert, that their presence is the sole cause of epilepsy; but in a great number of instances, not a vestige of these animals could be discovered, or any lesion in any part of the body. So that, notwithstanding all the attention which has been paid to the investigation of the nature and seat of this disease, we are left very much in the dark.

Epilepsy appears to be a functional disease of the brain and nervous system, produced by a variety of causes, sometimes by mental emotions; at

others, by various irritations affecting the digestive organs; and very frequently by some of the above mentioned organic lesions of the brain and spinal marrow.

*Treatment of epilepsy.*—Experience has convinced me, that much can be done for epleptics in preventing attacks; but almost every thing must be done by the patient himself in the intervals. I have seen little benefit from any mode of treatment during the paroxysm, except by placing the sufferer in the horizontal posture, and taking such precautions as will prevent him from being injured by the violence of the muscular commotion into which the body is thrown. One of the first circumstances to be attended to, is to put something between the teeth to prevent injury to the tongue, and the garments must be loosened, particularly stays and neck-cloths; and it is often very serviceable to sprinkle the face with cold water, particularly when the convulsions are confined to the muscles connected with respiration.

After the paroxysm is over, the patient should be kept quiet; the heat of the body supported, the bowels opened as speedily as possible, and light nourishing food in moderate quantity allowed. At no time should a patient load the stomach. The abuse of stimulants is to be abstained from, and every cause, corporeal as well as mental, which can possibly have the effect of disturbing the balance of the circulation, or exciting the nervous system. If there be marks of disordered action in the brain, the treatment must be more rigid; occasional cupping may be had recourse to, and if there be considerable plethora, a bleeding from the arm may be serviceable, together with keeping the head shaved, and the introduction of a seton in the neck, or a drain is to be made by means of an issue applied to any other part of the body. If worms be suspected, turpentine and other anthelmintics should be exhibited.

With respect to blood-letting, I have often seen it had recourse to, both during the paroxysm and in the intervals. It certainly has been sometimes serviceable in plethoric subjects; but, in general, it does not appear to have any beneficial effect, and occasionally has been injurious; therefore it is a remedy which ought to be used with great discretion.

It has been mentioned, that irritation in the stomach and bowels is a frequent cause of epileptic paroxysms. Some individuals seem to be born with very irritable mucous membranes; and I have seen several epileptics so constituted, that the irritation produced by a laxative medicine, or diarrhœa coming on without any assignable cause occasioned a recurrence of epilepsy. A lady affected in this manner with epilepsy, was recommended by one of the most learned physicians of the present day, to use dram doses of the powder of misletoe, which she persevered in without any apparent benefit for some months; at last happening to be passing through a country town, and being in want of a supply, an apothecary sent by mistake dram doses of powdered *oak-bark*, which proved of more service than any other remedy she had

previously taken. The only inconvenience experienced, was the subsequent difficulty of getting the bowels opened without producing irritation. Since this case presented itself to my notice, I have used astringents several times in similar instances with apparent benefit.

The ammoniuret of copper has been much lauded in the treatment of epilepsy, as also the nitrate of silver. The latter remedy has been pushed to an extent, which would almost surpass belief were the facts not well authenticated. It has been given to the extent of from one to eight grains a day, for weeks, without producing any effect, except slight griping pains, which ceased when the preparation was conjoined with opium. I have seen only two cases in which the remedy had any beneficial effects; and it is remarkable that they had been under the care of the late Dr. Baillie; the skin of both was changed from the natural colour to that of indigo, but they were cured of the disease.

Several patients have been under my care, who were able to prevent an epileptic paroxysm if they had time to apply a ligature tightly round the arm, the moment the *aura epileptica* was felt in the hand. This is a curious circumstance; but I can testify to the truth of it. One of these patients was found dead, having, it is supposed, died in the paroxysm; one end of a cord was in his mouth, and the other in the hand, shewing that he had been attempting to apply it round the affected arm. The only disease with which epilepsy is likely to be confounded, is hysteria; but it is a matter of very little consequence in actual practice; it being the slightest cases of epilepsy about which there can be any doubt, when the remedies applicable to the one disease, are exactly those which should be employed in the other.

Catalepsy is a form of epilepsy which ought here to be mentioned. There are generally no convulsions, the patient remains for a shorter or a longer time insensible, deprived of the power of voluntary motion, remaining in the position in which the body happens to be placed at the moment of attack; or if an extremity be moved into a particular position by an attendant, there it remains. This form occasionally runs into the true epilepsy with convulsions. It is, however, a disease of very rare occurrence.\*

## HYSTERIA.

Hysteria is another disease of the nervous system, the nature and seat of which have not in any degree been explained. It is a disease almost exclusively affecting females; but males are not entirely exempt. I have myself seen several well marked instances in gentlemen, apparently of very different constitutions and habits; but the attacks came on in all of them under the influence of depressing passions.

\* An excellent article on Epilepsy by M. Esquirol will be found in the "*Dict. des Sc. Med.*"; but the most profound work on this subject, is that published by the Baron Portel, entitled, "*Observations sur la Nature et la Traitement de l'Epilepsie.*"



*Phenomena of hysteria.*—The invasion of hysteria is sudden and irregular, sometimes periodical. In the slighter forms, the patient, without any assignable cause, bursts into a fit of weeping, which perhaps is soon followed by convulsive laughing, which may last for a few minutes; and before composure takes place, the patient gives several loud sobs. One of these fits may quickly succeed another, till the patient falls asleep. In more severe instances, complaint is made at first of pain in the abdomen or chest; a sensation is felt as if something were in motion in the abdomen, owing probably to flatus; it moves upwards, producing in the epigastrium a sensation of tightness and of suffocation; and a feeling is experienced as if a ball were ascending to the throat. The belly is tense; the surface is generally cold; the extremities exceedingly so. The countenance varies; sometimes it is red and swollen; or pale, and the features contracted; the pulse is also very variable; and in some cases, palpitations are violent and troublesome.

In the more severe instances of hysteria, there are symptoms shewing the existence of affections of the head and spinal marrow, indicated by spasmodic, and even convulsive affections of different muscles, particularly of the hands, face, jaws, and those connected with respiration; they are of the *clonic* kind. The pupils are dilated; and occasionally the paroxysm has a very close resemblance to epilepsy, only that the insensibility is rarely complete, unless the attack be combined with syncope. Occasionally there is retention of urine, but for the most part, there is a copious limpid discharge, in either case attended by symptoms of ischuria. Sometimes the disease commences with shrieking, which may continue from time to time during the whole paroxysm, and often terminates in hiccup of the most violent description. In some cases, dyspnoea is a very urgent symptom. Dyspeptic symptoms often precede the attack; and the bowels will, in general, be found in a very bad condition, with a tympanitic state of abdomen.

Some diseases of a very aggravated nature seem to be ushered in with violent hysterical symptoms, and require a very experienced eye to form a correct diagnosis. In many cases, however, the symptoms of hysteria do not take place till the patient is recovering. When the practitioner is in doubt as to whether any severe organic affection is going on, thus obscured, the patient should be seen at short intervals; and the treatment cautiously conducted in such a manner as to remedy and not aggravate the more severe malady if it exist.

*Causes of Hysteria.*—It is rare to meet with this disease before the age of puberty, or after the period of life when menstruation finally ceases; in most instances, women are attacked during the time of menstruation; therefore many have attributed the disease to the uterus. Girls of high passions, and those who have been over-indulged when children, are most liable to hysteria; as also those who become impressed with strong religious feelings, unaccompanied by a sufficient share of common sense to guide them. Women

when pregnant, and those who labour under the disorders of menstruation, seem strongly predisposed to hysteria. It appears to affect women of all constitutions,—that is to say, those who are robust and plethoric, as well as the pale, weak, and emaciated. Some attribute hysteria to the bowels; and there are not a few who consider it as a disease of the nervous system. Emotions of the mind, together with irregularity of bowels, seem to be the chief causes. My own opinion is, that it is a complicated disease, and that the supporters of these different pathological views are all partially correct.

*Treatment of hysteria.*—This is difficult at all times, and a radical cure in many cases almost impossible, unless we had the power of changing the temper, altering the disposition, subduing the passions, and relieving the mental distresses, of the fair sufferers. It is of great consequence, however, to attend to the bowels, and to improve the powers of digestion. The diet should be light and nourishing; cold should be avoided, and particularly cold feet; exercise in the open air should be advised; and the patient's mind should be gradually strengthened, by being directed to healthful and interesting pursuits; and much is to be done by a proper intermixture of innocent and rational amusement. During a paroxysm, the stays and all tight strings should be loosened, plenty of air admitted into the apartment, and sixty drops of the *spiritous ammonia aromaticus*, or the same quantity of volatile tincture of valerian, may be given in a wine-glass full of water. If the bowels are distended by flatus, laxative medicines will do much to produce its expulsion; these may be assisted by injections, containing a dram of the tincture of assafoetida, or a table-spoonful of the spirit of turpentine. Opiates are in many cases serviceable after the bowels have been fully opened. Bleeding has been strongly recommended, and is often had recourse to in this disease; but in pure hysteria, it is scarcely ever justifiable. Bitters, and more particularly the sulphate of quinine, will be found very serviceable in restoring the functions of the stomach and bowels. Should the disease be found to depend on any of the disorders of menstruation, the case must be managed accordingly, as will be pointed out in a subsequent part of this volume.

## CHOREA.

THIS is a disease of the nervous system, characterized by sudden involuntary motions of various muscles of the body, without being necessarily connected with fever, or any severe constitutional derangement. The appetite is generally unimpaired, and all the functions natural, except that, in many cases, the bowels are observed to be unusually tardy. But after the disease has continued for some time, the general health becomes impaired, and the functions of both mind and body are at last undermined. It most frequently appears between the age of eight and fourteen, but has been known to occur later; and several instances have fallen within my observation, where the disease attacked individuals after the age of twenty-one, and in two cases

between thirty and forty. The later in life the disease appears it is generally found to be comparatively more slow in its progress, and difficult to cure. Generally speaking, convulsive movements, or rather twitches, of the fingers and muscles of the face are first observed. The convulsive movements become in time more decided; strange contortions of the features take place; the disease extends to the voluntary muscles of all parts of the body, and frequently those of the lower extremities are so continuously excited, that the patient appears to be dancing. His walk is very unsteady, and he is most affected when he wishes most anxiously to control his actions. Another curious circumstance is worthy of being mentioned, that however violent the convulsive motions may be, they cease the moment the patient falls asleep, unless in severe cases of long standing. Articulation and deglutition are frequently difficult, more particularly the former. In young subjects, a more acute form of the disease is occasionally met with. The intellectual faculties are more impaired; the general health sooner gives way; the stomach and bowels appear much deranged, as is indicated by hardness, sometimes unusual softness, and swelling of the belly, together with constipation; the stools have a very offensive smell; and there are sometimes evidences of the existence of the disease denominated *tabes mesenterica*.

*Causes of chorea.*—The causes of chorea are very imperfectly known. The opinion broached by Dr. Hamilton senior, that chorea depends on a collection of feculent matter in the bowels, is so decidedly erroneous, that I need not say a word upon the subject. It attacks people of both sexes, more particularly children who are scantily fed, imperfectly clothed, and prevented from taking a proper degree of exercise in the open air. There can be little doubt, that those of an irritable nervous frame are peculiarly the subjects of chorea, and it has some resemblance both to hysteria and epilepsy.

*Treatment of chorea.*—This should consist in keeping the bowels regularly open, by means of mild but frequently repeated laxative medicines, never allowing a day to pass without producing at least two alvine evacuations. The diet should be light and nourishing; every indigestible substance should be carefully avoided. All means should be had recourse to, which will improve digestion if it be impaired, and restore the general health. In the two instances which I have met with above the age of thirty, the functions of the stomach and bowels were much impaired. But superadded to these, the chief existing cause in these cases, was the abuse of ardent spirits. The occasional application of leeches to the head when pain is complained of, and the administration of a narcotic when there is much nervous excitement, will be found serviceable. Good effects sometimes follow the use of warm, and others that of the cold bath. The oxide of zinc, castor, and many other tonics and anti-spasmodics, have been at various times in high repute.



## NEURALGIC PAINS.

THOSE neuralgic pains of which I am now to treat, are not produced by any appreciable organic lesion; they occur in every part of the body, and often return periodically. The disease is most frequently partial, sometimes, though rarely, it is general, and is not necessarily attended by fever. The *tic douloureux* is a striking example of this affection; it is generally classed as a surgical disease, but is more frequently relieved by medical, than by surgical treatment. The bladder, the stomach and bowels, and, it would appear, the heart also, are liable to be affected with neuralgia. The most troublesome and most frequent forms of the disease which I have met with in practice, are those abdominal pains which affect women, more particularly at the menstrual periods, which shoot down the thighs. They sometimes appear to begin in the back, and extend towards the abdomen, in which case the bowels are generally found obstinately constipated. The discharges by stool consist either of very hardened feces, or of gelatinous matter, resembling half-digested worms; at other times, they have a frothy yeasty appearance. Affections of the bladder frequently supervene, particularly if the attack come on during the menstrual period. This affection is of a different nature from that which is called dysmenorrhœa. In this disease the menstruation may be copious, of a natural appearance, and not attended with pain.

*Causes of neuralgic pains.*—Frequently unknown, and for the most part obscure. They may be occasionally traced to disorder in the organs connected with digestion; and in some instances may probably be connected with disease in the spinal marrow, or in the nerves themselves.

*Treatment of neuralgic pains.*—In *tic douloureux*, I have seen the knife used very often, and but seldom with permanent advantage. If the pain have left the part affected, it has attacked another nerve in the vicinity,—a strong proof that the disease is generally more deeply rooted in the system than is commonly imagined. In the treatment of neuralgic affections, proper regulation of the bowels, diet, and habits of the patient, and avoiding exposure in cold damp weather, are all points of the utmost importance. Almost all tonic and narcotic remedies have been successively in great repute; thus we find that the bark, iron, zinc, and other tonics, as also opium, musk, cicuta, hyosciamus, belladonna, and stramonium, have each had their advocates. If the pain be periodical, the use of large doses of quinine will sometimes be found beneficial. Many severe and long-standing cases have been much benefited by dram doses of the precipitated carbonate of iron; but to subdue a paroxysm of pain, and produce a long interval of ease, I know no remedy so immediately serviceable, whether the neuralgia be partial or general, as the sedative solution of opium, given in small quantities (15 or 20 drops,) by injection, or the acetate of morphia, in doses of 1–4th of a grain every 3d or 4th hour. Several very bad cases of general neuralgia have fallen under my observation, and these remedies were found beneficial after all others had failed. One case, in particular, may be mentioned: A gentleman who had



been frequently liable to partial attacks, was seized with general neuralgia during the period when he was preparing for graduation. His general health became much impaired; and not being acquainted with any medical man in particular, he sent for one of the gentlemen whose lectures he was attending at the time, but who offended him very grossly, by discrediting the account of his sufferings, and by terming his complaint "*a graduation sickness.*" After a lapse of a month or six weeks, I was requested by a family who were interested in his welfare to visit him. He was much emaciated, had a pale and haggard countenance, and was almost worn out by pain and want of rest. The disease was general, but the part most severely affected was the neck, where the pain was so much aggravated by the slightest touch, that he was obliged to sit with his neck and shoulders bare. He had almost abandoned the intention of graduating. After putting his bowels into proper order, I gave him, while suffering a very severe paroxysm of pain, a dose of the sedative solution of opium; and in less than ten minutes he felt more relief than he had experienced for several months; and by repeating the dose a few times upon the threatening of a paroxysm, he got rid of the disease, his health and strength soon recovered, he renewed his studies, and passed his examinations with considerable eclat.

In the affection to which I have alluded, as occurring in women, I have seen considerable benefit from the occasional use of a draught composed of turpentine, with an equal part of castor oil, and conjoined with twenty or thirty drops of the sedative solution. One of the most potent measures, after the diet has been regulated, and the bowels have been put into good order, is to produce, from time to time, an eruption on the abdomen or loins, by means of antimony ointment. In an obstinate case which lately occurred, much relief followed the use of strychnia, in doses of one-twelfth of a grain, repeated four times a day, till it produced imperfect vision, with some degree of headache; it was then intermitted for a few days, and when resumed, was given only twice a day. Some practitioners speak highly of cold bathing, while others do the same of warm; but I cannot say that I have seen either of them beneficial. Routine practitioners are too much in the habit of bleeding whenever the pain is severe, and of giving calomel or blue pill when the pain is referred to the right hypochondriac region. I have been consulted by individuals whose constitutions were injured by the frequent repetition of powerful remedies, and by some who never can regain the loss of blood, or recover from complaints thereby produced, and the too frequent use of mercurial preparations.

About the year 1812, Mr. William Wood of Edinburgh, called the attention of the profession to a neuralgic affection which was denominated "*Painful sub-cutaneous tubercle,*" and has lately published further observations and cases in the 3d vol. of the Transactions of the Medico-Chirurgical Society. But as this is avowedly connected with an enlargement of the affected nerves, requiring surgical, rather than medical aid, I will conclude by recommending the perusal of Mr. Wood's learned and interesting essay.

## CHAP. V.

### APOPLEXY—PARALYSIS.

---

#### APOPLEXY.

APOPLEXY is generally characterized by loss of sense and voluntary motion, the patient continuing comatose for a shorter or a longer period. It is sometimes attended with convulsions, and frequently followed by paralysis of some part of the body.

*Phenomena of apoplexy.*—To detail the varieties of apoplexy, with a view to make minute symptomatical distinctions, would be an endless and really an unprofitable task; as practical men are well aware, that at the commencement of the attack, experience does not enable them to tell whether the case is to be slight, terminating in recovery, or fatal. This is well exemplified, by observing the termination of those cases in which the loss of sense and recollection exist only for a few minutes, and in which the recovery appears as complete as it is sudden; yet perhaps in a few hours afterwards coma takes place and death soon follows. In my lectures I usually divide apoplexy into two varieties: 1. That in which no lesion of the brain has taken place, and after death no morbid appearances can be discovered; this has been called simple apoplexy. 2. That in which serous effusion, or extravasation of blood, is found upon dissection, and which has been termed extravascular apoplexy.

Although this plan is open to many objections, yet I am disposed to adhere to it for the present.

Apoplexy very rarely comes on without precursory symptoms, which, however, are sometimes so slight as to be disregarded. These are vertigo—headache—a sense of pressure applied to the head, and fulness, or a feeling as if the head were a great deal larger than natural—irritability of stomach—singing in the ears—occasionally impaired vision, double vision—some degree of deafness—impaired powers of articulation—weakness of memory and judgment, sometimes slight incoherency—restlessness or lethargy—startings, and a weakness of the limbs, which gives to the patient a staggering gait as if he were inebriated; these symptoms may take place with or without rigors.

Should an individual complain of several of these symptoms at any period of life, he may be regarded as on the very brink of a serious affection of the brain. If they occur in a person of a full habit with a short neck, the danger will be still greater; and if in the decline of life, it might be safely said that he is in immediate danger of an attack of apoplexy, although by care and good treatment the disease may be warded off for an indefinite period.

The form of the disease which I shall venture to term the slightest, is that in which the loss of sense and voluntary motion are very transient. It continues for a few minutes only, and leaves perhaps a slight paralytic affection of the muscles of the mouth; the patient is commonly thought by the attendants to have been only in a feint, from which he quickly recovered. The variety which may be called the most severe, is that in which the patient has for some time complained of some of the premonitory symptoms already noticed, is suddenly seized with loss of sense and voluntary motion, accompanied perhaps by convulsions, the respirations being stertorous, the pulse weak and frequent, and the patient never recovering from the state of coma. In practice, we meet with every variety between these two extremes.

During an attack, the limbs are generally flaccid, although occasionally some of the muscles may be found rigidly contracted; and in other cases, as has been already mentioned, general convulsions take place. The face is red, sometimes of a very dark colour; but occasionally it is pale and ghastly; the features are swollen, and the mouth perhaps drawn to one side. The respiration is sometimes stertorous, at others, not in the least so. Pupils are occasionally dilated; sometimes contracted, but almost always immoveable. The pulse is sometimes full and slow, not exceeding thirty beats in the minute; at other times it is weak, easily compressed, and quick, beating perhaps, one hundred and fifty in a minute.

In those instances in which death does not take place, and no organic lesion is produced, the patient soon recovers some degree of sensibility, and the power of muscular motion, when it may be discovered that one half of the body is paralyzed; the pulse, if previously slow, now rises to the natural standard; he then recovers his senses, perhaps very quickly, and looks about him with an expression of surprise; he also gradually recovers his speech, although he may have difficulty in articulating. In some hours, these symptoms will be found much diminished; he will gradually recover the power of his limbs, and in ten or twelve days, although weak, he may be pronounced to be nearly well. Instead, however, of recovering sense and voluntary motion immediately, patients sometimes continue comatose for some hours, and then recover more or less quickly in the manner already stated, being however at times lethargic for several days.

In other cases, the patients remain much longer comatose, and recover much more slowly, with some degree of loss of memory and of speech, which may be temporary or permanent, together with paralysis of one half of the body, or

only of one limb, the use of which may be either never or partially restored. I have seen several cases in which both mind and body were permanently reduced to a state of childhood.

In other cases, patients remain for months in a lethargic, paralytic state, from the time of the attack till death takes place, without the least appearance of amendment.

The period between the first appearance of any symptoms which can be called premonitory, and the actual apoplectic seizure, varies much ; sometimes years intervene, at others an instant after complaining for the first time of violent pain in the head, or of giddiness, the attack comes on. The period between the attack and the return of sense and voluntary motion, also varies greatly. The period between the occurrence of the first symptom and recovery, is also very various. The intervals between the attacks are by no means uniform ; sometimes only a few minutes intervene, at others hours, days, weeks, and even years.

Many people survive fits of apoplexy even when small effusions of blood have taken place into the substance of the brain, and so far recover as to be able to transact their ordinary business ; but it very frequently happens, that if the patient survive an effusion of blood for a few days, a new train of symptoms will be excited,—symptoms produced by inflammatory action in the brain, or membranes immediately in contact with the effused fluid.

*Causes of apoplexy.*—Apoplexy is said to be hereditary. It may come on at any age, but in the great majority of cases the age is above fifty ; certainly it may be said to be a disease of the decline of life. The individuals most pre-disposed are those of a full plethoric system, who have what is called a stout frame and short neck. Full living, idleness, sedentary occupations, late hours, and sleeping on soft pillows, increase the tendency to this disease, together with every other cause which disturbs the balance of the circulation. Diseases of the blood-vessels of the brain lead to rupture of their coats, and the consequent effusion of blood ; viz. ossification of the arteries, aneurism,\* and obstructions in the sinuses ; and it is also well known that hypertrophy of the heart sometimes produces apoplexy.

*Appearances on dissection in apoplexy.*—On cutting through the scalp of persons who have died of apoplexy, a considerable quantity of blood generally issues from the incisions. On removing the calvarium, the membranes are sometimes observed to be very vascular, with some fluid beneath the arachnoid ; occasionally, although rarely, blood is effused between the arachnoid, and the pia mater, giving an appearance of ecchymosis ; or the effusion may have taken place into some part of the substance of the brain. The parts which I have most frequently found affected, are the *corpora striata* and the

\* There is a splendid preparation in my museum, of one large and two small aneurisms of the sylvian artery ; the largest of which, about the size of a hazel-nut, burst, and a large effusion of blood took place with instant death. The patient was only 23 years of age, and the brain was very much broken down by the effusion.



*thalami nervorum opticorum*. The ventricles are sometimes found distended with coagula; and the cerebellum occasionally suffers. Effusion of serous fluid in greater or less quantity is found in the ventricles. It however sometimes happens, that no morbid appearance whatever can be detected.

In old apoplectics, who have survived many shocks, cysts are occasionally found, enclosing a clot of blood, or a fluid resembling pus, and sometimes they are empty, the contents having probably been absorbed. Some writers have described an appearance which they suppose to be a cicatrix, an almost complete restitution of parts having taken place. Sometimes we find considerable portions of the brain surrounding the effusion in various stages of inflammation, either shewing marks of increased action or complete ramollissement. On some occasions most extensive destruction from inflammation has been discovered in the substance of the brain, a remarkable instance of which is subjoined.

A gentleman, aged 51, stout in make, plethoric in constitution, having a tendency towards obesity, and accustomed to full living, was found dead in his bed after having had eight or nine apoplectic attacks, some of which were succeeded by temporary paralysis. The fit which preceded that which proved fatal, took place seven or eight weeks previously; it was severe, with a pulse as slow as 30 beats in the minute. Medical aid was promptly obtained, and he was saved by timely loss of blood. Subsequently to this attack, he was able to transact ordinary business, and actually attended a public meeting. Nay, on the night previous to his death, he played for some time at the game of backgammon, and evinced his usual acuteness of mind. On examining the head, the apoplectic attacks, and the paralytic symptoms of which this gentleman had so long complained, found a very sufficient solution in the mass of disease within the brain. The *dura mater* was found to adhere round the corona with such firmness, that it resisted every attempt at separation without tearing, and the skull itself was rather more than usually dense. On the upper surface of the brain a quantity of serous fluid was effused, while at the base both of the skull and brain, the blood-vessels were unusually numerous and full, giving an appearance of redness to the base of the skull, not often to be met with. The principal arteries of the base were enlarged in size, and presented numerous points of ossification, as did also the minute branches in every part of the brain. The ventricles were found to contain a small quantity of fluid, and their whole surface was red and vascular. In the third ventricle part of the *thalami* firmly cohered; but neither here, nor at the base of the brain, did the fulness of the vessels extend much beyond the surface. On cutting into the substance of the brain, the traces of much disease and an evident softening became apparent, particularly in the ganglions of grey substance called *corpora striata* and *optic thalami*, in which the softening had passed on one side almost into suppuration; and several regular cysts were discovered, four on the right side of the brain, and three on the left; but none of them were of large size; and although

both hemispheres were diseased from about the centre of the middle lobes forwards, yet the right had suffered considerably more than the other. Such anatomical evidence is rarely found of life having been protracted with the preservation of intellect, till the whole centre of the nervous system underwent such a change as that described in the above case.

*Treatment of apoplexy.*—Some routine practitioners will be found invariably to bleed in cases of apoplexy, without reference to the period of the disease and the state of the pulse. I have little doubt, from what I have seen, that valuable lives are occasionally lost, which otherwise might have been saved, by avoiding the lancet. If the pulse be slow and strong, a happier result may be expected from V. S. than if it be quick and weak. The feet should be put into hot water, in which mustard has been mingled; the garments should be loosened; the head shaved, and cold cloths applied. Active purgatives must be speedily administered, to be assisted by injections of turpentine, particularly if there be evidence of flatulent distention of the bowels; and blisters are to be applied to the lower extremities.

Should a patient be fortunate enough to recover from the immediate effects of the attack, much may be done by subsequent treatment, to prevent a return of the disease. It is of vital importance to keep the bowels daily and freely open, to avoid cold feet, and exposure to cold damp air. Regular hours and exercise are to be enjoined, and a seton in the neck will be found very beneficial. Frequent bleeding, whether by the lancet or by cupping, cannot be too strongly deprecated; our business being rather to prevent plethora by the above means, and by a proper regulation of the diet. I know no plan more likely to create constitutional distress, and to promote the quick formation of blood in the system, than frequently repeated bleedings. A great deal of mischief is done by keeping patients too long upon slops; it is far better, in many cases, after the first danger is over, to allow a small quantity of animal food for dinner, and toasted bread or biscuit in moderate quantity for breakfast and tea, than to give them a general order to live on farinaceous food, which, after all, many will not long adhere to, or if they do, they will take a large quantity to counterbalance the quality of the food. Restrictions should be made respecting the amount of fluid to be consumed in the course of the twenty-four hours; and, in all cases where valuable lives are concerned, and when the patients move in that rank of society where they can obtain every comfort and attention, it will be found of great consequence to regulate the quantity of food and diluents by weight and measure. All causes of anxiety should if possible be removed, the patient should sleep in a large well-aired room, upon a hair mattress; he should use the patent air-pillows, with the head and shoulders somewhat elevated.

#### PARALYSIS.

Paralysis appears to have been generally confounded with apoplexy by the older writers, who thought apoplexy was a complete paralysis and looked upon the latter as a partial apoplexy.

This affection is a frequent result of apoplexy, as well as of inflammation of the brain, and of disease of the spinal marrow; but it often exists without any apparent organic lesion.

Paralysis has been divided into several varieties. 1. Paralysis of the nerves of motion, which take their origin from the anterior part of the spinal marrow;—2. Paralysis of the nerves of sensation, which take their origin from the posterior parts of the spinal marrow;—3. Hemiplegia, which implies the existence of paralysis in one half of the body; 4. Paraplegia, which signifies that the lower extremities are paralyzed; and, 5. Partial Paralysis, as of the muscles of the mouth or of an extremity.

Paralysis of the motive powers may exist in very different degrees; it may be complete or incomplete; in the latter case, the individual uses the affected limb awkwardly, and it sometimes feels weaker and heavier than the other.

Paralysis of sensation may also exist in various degrees. Sensation is scarcely ever altogether destroyed, but is rendered more obtuse than usual; but in some instances of paralysis, the sense of touch is very acute, so much so as to be a source of considerable suffering to the patient.

At all ages individuals may become paralytic. I have seen several children born hemiplegic, and young subjects are sometimes attacked with the disease; but it is more frequently an affection of advanced age, and of men than women.

*Phenomena of paralysis.*—When palsy takes place without being preceded by apoplexy, it is not generally accompanied by marked disturbance of the vascular system, or of the respiratory organs. Frequently there are premonitory symptoms, similar in many respects to those which oftentimes precede apoplexy, and to a practised eye announce that a serious affection of the nervous system is at hand. We sometimes perceive weakness of an extremity or numbness, together with coldness; and occasionally there is violent pain in a limb. I have known paralysis to affect many people who had been subject for years to violent headaches, sudden pains in the course of the spine, and tingling in the extremities. As the disease advances, the weakness is more apparent; the patient easily loses his balance, he always feels unsteady, and experiences increasing difficulty in going down stairs, and walking on an inclined plane. By and by he is obliged to use a stick; at length he cannot walk without receiving support from an attendant; and at last he is unable to move from one apartment to another.

Although the disease sometimes approaches so slowly, that I have known persons to be seriously threatened for years previous to the paralytic attack, yet at other times it comes on very suddenly. Frequently there is momentary insensibility, and the patient's mouth is found to be drawn to one side; or the disease may attack an arm, or a leg; or one half of the body may be affected. Sometimes the patient becomes paralytic without any affection of the brain. Violent cramps sometimes take place in the extremity, which soon after is found paralytic. The bowels are generally very torpid; sometimes



the muscular powers of the bladder are paralyzed, at other times those of its sphincter; in the former case, the patient cannot expel the urine, in the latter it is passed involuntarily; frequently the rectum is similarly affected. The pulse will be found in different states; frequently quite natural; but in the affected limb it is generally observed to be weaker than in the sound one. The limb generally becomes emaciated, although to the patient's feelings it may be considerably larger than natural; it is usually colder, although in rare cases it is found to be above the natural heat. The mental faculties continue in many cases of paralysis quite unimpaired; in others, they are slightly affected, the patients being sometimes a little incoherent, or they betray some weakness of judgment; occasionally a state which has been called second childhood is produced, and continues till death. Of all the mental faculties, memory appears to be the one most frequently affected; the names of individuals and of countries will be forgotten, while circumstances connected with them may be often alluded to by the patient, who will be found in the course of conversation to forget words; and it is curious that the memory will be more perfect respecting transactions which occurred twenty or thirty years before, than of those which took place during the previous day. These circumstances, together with the appearance of the patient, particularly the expression of countenance, which is frequently silly, too often give an impression to a stranger, that his mental faculties are weakened or destroyed, and the more so if, as sometimes happens, the saliva be running out of the corners of the mouth, and the speech is affected. This is most important, as a will was lately made by a gentleman when in this state, which was afterwards disputed by the heir-at-law; all the witnesses who had frequent intercourse, and several who had occasion to transact important business with him, were able to swear that he was of sound mind at the time, and for some time after the will was executed; whereas, on the other hand, some who only saw him occasionally, judging from his appearance, and the lethargy with which he was at those times affected, swore that he was neither capable of thinking nor of acting properly.

*Causes of paralysis.*—There can be no doubt that paralysis of every kind and degree may be produced by disease in the brain and spinal marrow. It is, however, more frequently produced by disease of the spinal marrow. Facts seem to prove that paralysis may be produced by diseases of the nerves of the affected limb, without any lesion in the central parts of the nervous system; and I also believe, from the effects of certain remedies, that the disease under consideration may be the consequence of functional derangement of the nerves of the part affected, as well as of the brain and spinal marrow. Too much sexual indulgence, and certain noxious and disgusting habits, occasion palsy, particularly paraplegia.

*Treatment of paralysis.*—We should be guided in the treatment of paralysis, by the duration of the disease, and by the pathological condition of the



body on which this symptom depends. If the disease be recent, and the individual not weakened, blood may be drawn both generally and locally, care being taken not to carry the bleeding too far. Strong laxatives must be exhibited at first, at short intervals; but subsequently, during the progress of the case, they are to be given at longer intervals, so as to produce one or two evacuations daily, keeping in mind, that in most paralytic affections, the stronger purgatives are required to produce even a moderate effect. Emetics have been recommended, but they should not be employed unless there are evidences of a loaded stomach; little danger need be apprehended from the temporary increase in the determination of blood to the head which is supposed to take place in the act of vomiting. Frictions on the affected part, with or without stimulating embrocations, are said to be serviceable, as well as counter-irritation in the course of the spine, produced either by any of the ordinary rubefacients, or the tartar-emetic ointment; caustic issues, as recommended long ago by Mr. Pott, may be applied; or moxas, which have been much praised by Dupuytren and Larrey. Electricity and galvanism have been used in the paralytic affections; but I cannot say that I have ever seen them beneficial. Some employ the hot bath, and others the cold. If one can be commanded, the patient should sleep in a well-aired apartment; and it is of great consequence to keep his mind amused without being fatigued.

The *nux vomica* has been much employed of late years in paralysis. It has been tried to a considerable extent in the hospitals at Paris; and there can be no doubt that it has occasionally done good. It is exhibited in the form of powder, and of spirituous extract; of the powder two grains, of the extract three, repeated from two to six times daily, constitute a proper dose for an adult. It has also been given in the form of injection. In some cases, a tendency to muscular contraction appears in half an hour after its administration; and it is curious that the sound parts remain unaffected. It is said to increase the appetite, and sometimes to produce stupor, with a feeling of intoxication, and in an over-dose, tetanic convulsions. Still more recently, the active principle of *nux vomica*, called *strychnia*, has been employed. I have used both preparations in a number of cases, and as yet have seen only one case in which the *nux vomica* was decidedly beneficial; it was increased in doses of from two to eight grains daily, and its use persisted in for several weeks. Of the *strychnia*, I have exhibited four or five twelfths of a grain daily in several instances; and in two cases the drug seemed to produce spasmodic muscular contractions of the paralyzed limbs. The *strychnia*, in particular, is worthy of further trial, as in many cases which do not depend on organic lesions in the central parts of the nervous system, it will probably be found very beneficial.

Dr. Bardsley, (Manchester,) states, that he employed the *strychnia* in some cases of paralysis with no benefit, in others with only partial advantage, but

in the majority with complete success. He considered that it may be an efficacious, though not a certain remedy in this affection.\* Dr. Bardsley has given thirty-five cases,—of which twenty-two were cured—ten relieved—in two it had no effect—and one patient left the hospital.

\* Hospital Facts and Observations, page 38.

## CHAP. VI.

### INSANITY—HYPOCHONDRIASIS—AND DELIRIUM TREMENS.

---

#### INSANITY.

THIS, I am aware, is a term of very extensive application. Under it, I mean to comprehend every alteration of the functions of the brain from a state of sanity, with the exception of the delirium which so frequently accompanies fever and intoxication, and hypochondriasis.

There are many degrees and shades of insanity. Some persons may be affected with the most violent delirium and incessant raving, furiously threatening the attendants with destruction, wrong alike in their perceptions and reasoning faculties. Others may have some excentricity, produced by an error of perception, a wrong impression, or some slight derangement of judgment.

Cases are frequently met with in practice, where there is diseased perception with more or less derangement of judgment, or the former may exist without any such complication. For example, an insane person frequently perceives objects which do not exist, or he may see a post which his diseased perception transforms into a monarch; he will kneel before his majesty, deliver an address, and kiss hands; every act as it is done at court will be correctly imitated. Nothing can be said to be wrong about the insane person, except the first erroneous perception; all his actions tally with the situation in which he supposes himself to be placed. We meet with others, where an erroneous impression is taken up, the reasoning faculties being perfectly sound, so that a man may conceive that a minister of state has been guilty of some dereliction of duty. He will write upon the topic, make out charges against the individual, and reply to letters received upon the subject; and yet no one, upon reading his correspondence, or from conversing with him, could discover any error of reasoning, or any expression which would lead him to conclude that he was insane; nothing is incorrect but the first impression. In some instances, we meet with errors in the reasoning faculties, which frequently lead men to ruin their fortunes, and bring an accumulation of distress upon their families, by following out some castle-building

speculation, the absurdity of which is too apparent to every one but themselves. In others, we can only discover a disordered state of the association of ideas, or a disproportionate emotion from the application of slight causes. On other occasions we find individuals believing the fancies of a wild imagination to be realities; they transform themselves into kings and peers, or fancy themselves reduced in circumstances, even to beggary. In other cases, complete fatuity takes place.

These different states may be variously mingled and modified into endless varieties of insanity, as it is usually treated of in books; and the symptoms may be still more diversified by the degree of excitement or depression which co-exists, together with the peculiarities of constitution, and the state of the patient's health.

Insanity sometimes makes its attack suddenly; but in general it is slow in its progress, although decided in its precursory symptoms, which, however, develop themselves differently in different cases:—One patient shews elevation of spirit, speaks loud, is easily irritated, and some eccentricity of conduct is sooner or later observed; at last he will be found to follow out some particular hallucination, which will occupy his thoughts more and more completely as the disease advances. Another individual will shew depression of spirits; he will be observed to be more cautious, timid, or shy in his manner; he thinks he hears the voices of individuals planning his destruction, or robbing him of his property; or his depression of spirits may be owing to religious doubts as to his own worthiness, or to the existence of a future state; or he fancies himself haunted by evil spirits.

We sometimes meet with an intermediate condition, where an individual shews his ordinary state of temper and disposition, he evinces neither increased excitement nor depression, while an erroneous notion, religious, political, or professional, haunts his imagination for weeks, months, or even years, which shews itself occasionally, but never disturbs his health, or alarms his friends, till some accidental circumstance gives the mental disease activity, when it breaks forth in a most decided manner.

Some individuals shew a great desire to quarrel, litigate, and to take personal revenge for imaginary insults and injuries; but all these propensities may exist separately:—A man may be extremely quarrelsome, but, if properly managed, easily appeased, and may never shew any tendency to take the life of a fellow creature, nor would he do any thing to hurt him. Another will take revenge only in one way, by litigation; while the third, but happily this is the rarest case, would murder all and sundry in the most cold-blooded manner, and when under restraint, will glory in the thought of murders he has committed only in his own imagination; or in the most ingenious way he will endeavor to excite hatred between his keepers, so as to induce the one to murder the other. Others shew a most determined propensity to commit suicide, and sometimes follow it out with so much pertinacity, as to elude at



last the vigilance of the most attentive keeper, and, what is very curious, each will have his reason for the act. The vanity of one has received a blow which has lowered him in the eyes of the world, and he destroys himself because he cannot live dishonoured, degraded, or even laughed at. The fear of another induces him to commit the rash act with a view of escaping from some evil spirits, or of disappointing the machinations of some relatives who have conspired either against his peace, his life, or property. I have known a few instances also of men committing suicide, who could not survive the loss of a wife or child, and it would appear that the act was committed under the impression that their departed spirits were to be immediately afterwards re-united.

Several curious circumstances quickly attract the attention of those who are in the habit of attending this unfortunate class of patients. 1. A hatred of, or indifference towards those to whom they were previously most attached, because these are the individuals who, the maniacs suppose, have conspired against them, and have ultimately deprived them of liberty. 2. Their physical powers are frequently not at all affected. Thus a body of insane soldiers under confinement, not completely fatuous, will fall into the ranks upon the usual signal being given, and will perform a number of mechanical acts at the word of command, with nearly as much attention and precision as if they were sane.\* 3. The natural functions are generally not materially impaired, unless it be in those cases where insanity supervenes upon some other disease, or is produced by an injury of the head, some organic lesion in the brain, or by long-continued indulgence in the use of intoxicating liquors, when there may be heat of skin, quickness of the pulse, and a train of nervous and other symptoms, which need not at present be more particularly alluded to.

*Causes of insanity.*—Unfortunately there can be no doubt that insanity is hereditary, at least under certain limitations; but I believe it may be warded off for many years, and in some cases entirely prevented, by proper management; which principally consists in keeping all the functions of the body in a natural state by diet, exercise, and attention to the bowels, as well as by avoiding all excesses, keeping the passions under controul, and the mind properly exercised. Gluttony and drunkenness are too frequently the causes of insanity, and particularly the latter, in cases where no hereditary predisposition can be traced. Individuals seem also to be more and more predisposed to the occurrence of insanity as age advances, it being rare before the age of puberty. Among the passions, love, “by which the young and tender wit is turned to folly,” may be particularly mentioned as a fertile source of the

\* This I had an opportunity of seeing at Chatham, where a large establishment has been formed for the insane officers and soldiers of the British army. Fort Clarence is, I believe, exclusively used for this purpose, and the unfortunates there have the enjoyment of good air and exercise, are well fed, kindly used, and carefully superintended. Long may it remain a monument to the good feeling and benevolence which characterized his late Royal Highness the Duke of York, and to the zeal and exertions which Sir James M’Grigor has always displayed to increase the comforts of the British soldier.

malady under consideration, particularly in females. It is rare to meet with a case of insanity from this cause in men, for reasons which are too evident to require being mentioned. Intense and long-continued anxiety respecting the results of extensive mercantile speculations, as also the pernicious vice of gambling, are frequent causes of insanity. It is likewise a disease which sometimes attacks females after parturition, and also, when the predisposition is strong, during the diseased states of menstruation.

*Appearances on dissection in insanity.*—Nothing satisfactory has yet been discovered, for, although many organic lesions have been found in the brains of individuals who have died insane, yet the same lesions have been observed where no insanity existed; and in many cases of insanity, no diseased appearance whatever has been detected in the head. Hence, in the present state of our knowledge, I am inclined to attribute the various and ever-varying phenomena which occur in insanity, to functional disease of the different parts of the cerebral mass.

So far for the symptomatical description of insanity, which, in my opinion, teaches nothing of the nature and seat of the disease. But if it be true that the brain is a congeries of organs, that each performs a peculiar function, and if we admit insanity to be a disorder of function, then indeed there seem to be sufficient grounds to warrant my departing from the usual beaten track, and submitting to my readers a short account of insanity, founded upon the phrenological principle that the brain is a congeries of organs. According to Dr. Andrew Combe, in his able work on Insanity, insanity is not a specific disease, but a symptom of disordered action in the brain or organ of mind, and, like every other disorder of function, it may proceed from a variety of different states. The delirium of fever is one form of disordered mind, which is always viewed as a symptom, and so ought all other forms to be. The brain being to the mind what the eye is to vision, it follows that, just as vision is deranged by many pathological states of its organ, such as ophthalmia, iritis, cataract, &c. so may the mind be deranged by many states of the brain. The sufferers on the raft of the Medusa became mad from starvation and exposure, while many become so from excess, particularly in stimulants. The asylum at Milan is filled by lunatics from bad feeling, and almost all recover by nourishing food; while Bayle, at Charenton, finds many cases arise from chronic meningitis; and Broussais declares, that in the early stages it is so obviously from inflammatory excitement, that it may often be cut short by free leeching, as certain as pleurisy is by blood-letting. Hence it is not the same disease in all.

Insanity, being a symptom of morbid action in the brain, springs naturally from causes affecting its health, and hence a great affinity between the causes of acute cerebral affections, and of those on which insanity depends. The *hereditary* tendency depends on a peculiarity of nervous constitution, and is of primary importance. *Excess* of some mental qualities leading to eccentricity predisposes in irritable constitutions, from the high action into which

the corresponding predominant organs are thrown ; and hence the latter are generally those whose manifestations are deranged, as proved in Dublin, by Mr. Combe having, in so many instances, pointed out correctly *from developement*, the probable form of the mental affection. Other predisposing causes, such as age, sex, profession, &c. are referable to the same principle.

The *exciting* causes are, *whatever disorders the action of the brain*. That organ requires regular exercise for its health and preservation, and for the improvement of its functions, just as other parts do, as the muscles in fencing or dancing. Practice in the latter instances increases nutrition, and consequently, power ; and it gives facility of combination to produce a given end. The same organic laws preside over the brain. Consequently, *excess* of exercise, as in intemperate study, excitement of passion, anxiety and strong mental emotion long sustained, leads to morbid cerebral action, with derangement of function, in irritable subjects. *Deficiency* of exercise, or idleness, leads equally to diseased action and manifestations, as exemplified in the melancholy and ennui of the retired merchant, or soldier, and in the numerous victims in the unoccupied classes of society. Local causes act by disordering the brain. Blows on the head, *coup du soleil*, intense cold, drunkenness, meningitis, &c. shew this.

Dyspepsia, and other disorders of the abdominal viscera, excite it secondarily in some instances in *predisposed* subjects, but, in general, mental causes have preceded. The same remark applies in nymphomania and erotomania, in which the affection of the generative organs is generally the effect, and not the cause, of the cerebral disturbance. The brain, in short, is more frequently disordered by *direct* than by indirect causes, and in this respect the analogy between it and other organized parts is preserved.

The *symptoms* indicative of insanity consist of deranged cerebral functions and local phenomena. Every sense, every nervous function, and every faculty of the mind, may be involved in the disease or not, and hence indescribable varieties occur. The *true standard is the patient's own natural character*, and not that of the physician or of philosophy. A person, from excess of developement in one part of the brain, may be eccentric and singular in his mental manifestations, and yet his mental health be entire. Before we can say he is mad, we must be able to shew a departure from his *habitual* state, which he is incapable of controuling. An irascible man may be very boisterous without being mad ; but if a mild and timid creature become equally boisterous and irascible, we may fear for his wits. One may be *naturally* suspicious, jealous, and cunning, without being insane ; but if a man of an open, generous, and unsuspecting nature, becomes so, danger to his cerebral health is at hand. The derangement may consist in *excitement* of the patient's predominant qualities, in *diminished* action, or in *perversion* or *vitiation* of function. A proud man, who, during disease, fancies himself a king, is an instance of the first condition, or that of excitement of function ;—one who humbles himself in the dust, and fancies himself unworthy



of regard, is an example of the second, or diminished function;—while one who fancies himself something out of the ordinary course of nature, is a specimen of perverted or vitiated function;—or one who is attached to friends when in health, may, when insane, either have inordinate love for them, be indifferent, or have a hatred and aversion to them; and so on with every feeling and faculty of the mind.

The existence of digestive derangement modifies the mental state, and gives greater anxiety and irritability than when the stomach, liver, and bowels act well. Other complications modify in other ways.

Monomania, religious, erotic, and other manias, are not different diseases. One organ or faculty being chiefly affected, and the rest entire, give rise to monomania; but the proximate cause may be, and often is, the same as when all the organs and faculties are affected. Religious despondency is a mere symptom also, and appears because the function of some cerebral parts is to manifest religious feelings, and those being sick, the function necessarily suffers, and the feeling is altered. But the *same* pathological state affecting combativeness and destructiveness, would produce furious mania.

Monomania and melancholy are less easily curable, not from the proximate cause being more serious, but from the other faculties and reason succeeding in longer concealing the existence of aberration; whereas in mania, it betrays itself early in spite of the patient.

Insanity is not a state separated by a broad line from sound mind. Every gradation is observable, and we perceive morbid action before we can venture to say that the patient is insane. Some are cured at home of mental affections in a few weeks, who, if sent to an asylum, would become mad, and remain so for months or years.

*Treatment of insanity.*—The first important question which naturally suggests itself in the treatment of insanity, is what combination of circumstances ought to exist, before a medical man is entitled to commit any individual suspected of labouring under it to an asylum, or to any other place, where he is not only deprived of his liberty, but is placed under some degree of restraint. This is a duty which I fear is still too generally performed without sufficient attention to all the features of the case. Medical men should take care not only to be themselves satisfied of the necessity of such a serious step, but that they have sufficient proof, which cannot fail to convince a jury that it was most necessary. If an insane person evince a propensity, either to take away his own life, or threaten that of another, there can be no doubt that confinement is absolutely necessary. If an individual, in a state of mental aberration, disturbs the public peace, and is a source of annoyance to any one, a medical man, if consulted, should recommend, as a preliminary step, the interference of the local authorities. If a patient act in such a way as to offend the public morals, he being insane, or even eccentric, I also think an appeal should, in the first instance, be made to the same source for protection. If a person be unable to manage his own affairs, if he enter into



such speculations as none but a madman would think of undertaking, which must be connected with some striking aberration of mind, or if he squander away his money, as in buying a pack of hounds, or expensive paintings, which neither his fortune nor his rank in life entitle him to do, a medical man, consulting his own safety, and the respectability of his character, will take care that he is able, by the evidence of a sufficient number of disinterested witnesses, to prove the fact to the satisfaction of judge and jury, before he signs the committal of any lunatic.

A man may be perfectly mad on one point, and yet be quite able to manage his own affairs. Thus he may suppose, that his legs are made of glass, and that if he attempted to stand they would break into a thousand pieces. A second may fancy, that if he attempted to pass through a door, he would be crushed to pieces; a third may imagine himself to be a king; and yet they might be able to manage all the transactions of ordinary life, and be wrong upon no other point. Surely it would not be justifiable in any medical man to commit such patients to a mad-house. Individuals are frequently under some religious delusion, which may be quite innocent in itself, either as it relates to the individual, or the public at large. One man may fancy himself to be of divine origin; another may be in constant communication with angels and holy spirits; and a young lady may innocently enough employ herself from morning to night in writing love letters to angels; and yet a medical man would not be entitled to send them to a mad-house, unless public decency were offended; indeed, were it otherwise, the one half of the world might be for committing the other, who think differently on religious matters. Perhaps there are more religious than any other class of lunatics; and at present, there are a dozen or two of young ladies, who are too well fed, and have too little to do, praying by detachments, day and night, for the conversion of some of the highest, the most pious, and the most rational members of the Scotch church. There are others who, in the wildness of their diseased imaginations, fancy, that a proclamation for a universal pardon, alike to saint and sinner, has been received from heaven; and that a power has been imparted to them, in virtue of prayer, to perform miracles; in short, that they can make the lame walk, renew the lungs of consumptive patients, and even raise the dead! Yet I suppose they consider themselves perfectly sane, and would be very much surprised to find themselves safely lodged within the precincts of an asylum; but it would not be difficult to shew, that they, as well as the followers of Johanna Southcote, and sundry other wild enthusiasts, are at least not very wise, and that a few weeks' work on the treadmill, with scanty fare, would probably cure them of such fantasies.

The second point of importance is, supposing an individual is considered insane, ought he to be sent to a proper establishment, or treated at home? After considerable experience in the treatment of insanity, I am disposed most unhesitatingly to declare, that removal from his own house, if not actually necessary, is the step best calculated to produce a speedy recovery, and more particularly if he be the head of a family, it being the most difficult thing to

gain a sufficient degree of authority over a person in the house where he has been always obeyed. But I entertain great abhorrence at the idea of consigning any person to a private mad-house, where the money received for board and medical attendance is an object to the individuals who keep the establishment. In a case where the liberty of the subject, and the peace and happiness of so many individuals are at stake, should not private mad-houses be put down by law? Although, then, a decided preference should be given to a public establishment, yet I am not prepared to say that they might not be improved; and if an investigation were instituted by Parliament, it would be discovered, that the duties which the directors of such institutions take upon themselves, are generally very slovenly, and sometimes very imperfectly performed.

In the treatment, more is to be done by moral management, and by attending to the bowels, to the regimen, and to the temperature of the patient's body, than by heroic remedies, such as bleeding and blistering, exhibiting digitalis, and persevering in the use of strong drastic purges. As to general bleeding, it is necessary only when there is considerable plethora, vascular excitement, determination of blood towards the head, or more especially signs of inflammatory action in the brain; but local bleeding should be, if possible, substituted, unless the balance of the circulation be much disturbed, when the lancet must be used. In a considerable number of cases, shaving the head, and the occasional application of cold, by pouring water in a small stream upon it for a considerable length of time, will frequently diminish excitement, and produce tranquillity, without having recourse to bleeding.

Opiates have been so often found injurious, that by some they are laid aside entirely; but I imagine this has happened from their indiscriminate employment, as well as from the insufficiency of the doses. I have seen the best effects from the exhibition of eighty, and even a hundred drops of laudanum, repeated every third hour, in cases where there were great irritability and want of sleep, and where there were no marks of organic disease within the brain. Blisters are rarely serviceable, and they oftentimes irritate a patient till he becomes unmanageable. Large doses of tartar-emetic will sometimes be found useful, having the double effect of controuling the circulation, and keeping the bowels open.

The moral treatment consists in obtaining complete power over the mind of the sufferer, if possible, without the application of any violent means. This can be effected only by studying his character, avoiding argumentative conversation, and keeping a sharp look-out, that he may have neither excuse nor opportunity to aggress. In short, a soothing system, and frequent acts of indulgence, as rewards for quietness and good conduct, are most conducive to recovery. The high and ferocious maniac, however, requires to be secured during the night, by means of straps and strong gloves, which are fastened in a peculiar way, so that the patient cannot do himself or his keepers any injury;

and during the day, to be confined in a large well-cushioned chair, which is fixed to the floor, and even here the soothing system is of decided advantage. The superintendents and keepers should possess great prudence, and imperturbable tempers; and are never, on any account, to be allowed to exercise any harshness, either in action or expression, towards a patient. In many establishments there is a chair fixed in a box, very much like a sentry-box, which is whirled round with great rapidity by machinery; and I am told, that it has been found of great service in those cases where great violence exists with a considerable share of reason. The remedy has to be used only once; subsequently the mere threat of it is quite sufficient to make the patient controul himself. Every ward should be heated with warm air, which will render fires in the apartments unnecessary. Comfortable clothing, and preserving warm feet, ought to be strictly attended to. Unless a patient have fever, his food should be substantial, and at the same time nourishing; a dinner of good roasted or boiled fresh meat should be allowed. A proper share of exercise in the open air is highly necessary; and nothing is more beneficial than a minute attention to a proper classification of patients; yet I fear, from negligence and laziness, this is either much neglected, or very imperfectly and irregularly performed. In a receptacle for the insane, this last should be insisted on as a daily measure. The number of directors should be increased in each establishment, and two should be compelled, under a severe penalty, to visit the insane every day at the hour of dinner, to satisfy themselves with respect to the food when presented to the patients, both as to its quantity and quality, and to see that an individual with some returning sense, is not horrified by the presence of others in a much worse state than himself. Some means should also be contrived to allow the visits of friends as often as may be wished, without the patients being aware of their presence.

It often becomes a difficult matter to decide when a patient is in a fit state to be discharged, and return to his friends. If I might be allowed to insist upon any particular line of conduct, it would be, not to dismiss a patient till he has been for at least two months without shewing any aberration of mind; and it is even justifiable, before his dismissal is determined on, to converse with him, touching the chord of his previous illusion. This should be done by the medical attendant, whose responsibility is great, who should be well remunerated, and be chosen as much for his honorable and benevolent feeling, probity, and strait-forwardness, as for his talents. It would be perhaps an additional safeguard if this examination were conducted in the presence of a magistrate.

In addition to these remarks respecting the management of the insane, the following valuable observations by Dr. Combe are annexed. "Besides what you notice with regard to treatment, every thing demonstrates that *employment* to the patient is not sufficiently studied. The brain loses its health from vacuity of mind, and yet we shut up in scores, in perfect idleness, men who, when well, were accustomed to a bustling and active life, and whom, at any



time of their lives, idleness would have driven mad. Manual labour and occupation are also of immense consequence, and the moral influence of keepers and superintendants acquainted with human nature, and interested in their avocation, is prodigious, in producing quietude, and accelerating recovery, just from giving to the brain that healthy exercise which it requires. Lunatics retain a good deal of reason even in their worst condition, and hence are more accessible to the influence of reason and example than might be supposed. In every point of view, it is best to act towards them with the same consistency, firm honesty, and good feeling, as if they were quite in possession of themselves. They are quick in detecting deceit, and when once deceived, they never give confidence again. I mention this, because I differ from what ——— once said to you on this subject, in having flattered D——'s predominating vanity, and led him by it, and from what you said in accordance with his views. My experience says, never advance a word which you cannot conscientiously stick by when the patient recovers, and you will retain your ascendancy. Do not thwart his delusion, but neither give it any countenance. Our friend is now satisfied I am right in this, and I have decidedly proved it in practice. Remove all provocatives, and allusions to the morbid feeling or idea, and exercise the rest as much as possible on their own objects.

"In subjects not delicate, and not beyond middle life, I find many who are greatly benefited by cupping, and free and repeated leeching, followed by tepid bathing, and cold to the head while in the bath. Many, of course, do not require depletion, but it may be advantageously used when the usual indications exist. General bleeding I know little of, and do not like it. After the irritability and excitement of the immediate explosion are over, a *great deal* of exercise in the open air seems most useful in diminishing irritability, relieving the head, and procuring *sound* sleep; but if used too soon, it injures. The ordinary principles of pathology ought, in short, to regulate medical treatment, and adapt it to the state of the *individual* patient, for the latter is the only safe and successful plan."

## HYPOCHONDRIASIS.

This disease, when severe, is synonymous with monomania, and might very properly have been comprehended under insanity.

Hypochondriac symptoms affect two classes of individuals: 1. Those whose ailments are only imaginary or functional; and, 2. Those whose complaints are produced by organic disease. The first class of patients embraces the idle, the wicked, the dissipated, and those who are brought up without a profession, who, when left to their own resources, know not how to kill time. The minds of such persons are enervated from a want of due exercise of the faculties they may actually possess, till at last the vital actions become weakened; some of the natural functions, particularly those performed by the stomach and bowels, may be impeded; at which time, should a friend die,



or the history of a disease fall in their way, they will immediately fancy themselves affected with the same disorder. Or they may have a hundred and fifty different complaints, and think they experience a thousand strange sensations and unaccountable feelings, till bodily disease is in the end engrafted on the mental. The organic disease acts upon the mind, producing a state which, to say the least of it, is far from one of sanity. The primary disease may be functional or structural. If the former, the stomach and bowels will, in general, be found to be the parts at fault; and I have sometimes discovered, on dissection, diseased states of the liver, lungs, kidneys, bladder, heart, blood-vessels, and also of the brain and its membranes.

I have often been surprised, while attending hypochondriacs, to hear the animated description they give of their feelings, and as one impression is driven away, another quickly appears in its place. They sometimes declare that they have no appetite, and cannot eat, while they may be in the very act of taking a hearty dinner. In the same way with regard to sleep; according to their own account, they never close an eye night or day, although it is well known that they sleep ten hours out of the twenty-four. Some of them never have any passage from their bowels, although they pass two or three evacuations daily; and on one occasion, a lady told me that she had not had a stool for thirty-eight years, and wished for something to relieve her, although her bowels were quite regular at the time! Now surely persons cannot be said to be sane under circumstances such as these. Patients affected with hypochondriasis are not always in the same state; perhaps without any assignable cause they become quite well, and again relapse; so that the disease is intermittent and irregular until it acquires some duration and intensity, when it continues, the patient becoming progressively worse.

*Causes of hypochondriasis.*—These are to be detected in a more satisfactory manner, by studying the character of the individual, assisted by observing the phrenological developement of the brain. The character of the individual will be found in general to be timid, either from having been weakened by previous bad habits, or in consequence of a total want of moral courage. Hypochondriasis almost never makes its appearance before the age of puberty, and it should be made extensively known, that it more peculiarly affects aged bachelors and old maids!

*Treatment of hypochondriasis.*—Both classes of patients are objects of pity and compassion, and alike demand strict and decisive medical treatment. We should never have any doubts, nor should we attempt to persuade a patient, that he has not the disease which he supposes himself to labour under. Our language should rather be, that we possess a remedy which will most undoubtedly effect a cure; and we should use every exertion to inspire the sufferer with hope. To all patients we should be regular in our visits, and guarded in conversation; but more particularly so when attending a hypochondriac. The bowels should be kept open; the diet should be regulated according to circumstances; and if the patient labour under local disease, it should be

treated accordingly; counter irritation produced by frictions with antimony ointment, will be often found beneficial, as well as the occasional use of warm and cold bathing. Air, exercise, and every kind of innocent amusement, should be strongly urged; and the physician should take the trouble to ascertain that his directions are properly followed; but he must not be at all surprised, or put out of temper, on finding that the patient, if wealthy, is in communication with twenty other medical men.

## DELIRIUM TREMENS.

Whenever a person has delirium, accompanied by a tremulous motion of the body, or even of a part of the body, he is said in common language to be affected with delirium tremens. Two pathological conditions of the body are often confounded by practitioners, as well as by writers, under this term. The one is delirium accompanied with trembling, the consequence of the combined influence of irritability, and general functional disease of the nervous system, with positive weakness of the whole frame. In the other, similar symptoms exist with irritation and increased action, sometimes inflammation in the brain, the patient having a robust, perhaps a plethoric, at all events an unweakened state of body. Both are the consequences of excessive indulgence in strong potations; but a distinction between the two is, in general, not very difficult, if we can depend upon the history given of the patient's previous habits, by comparing these carefully with the immediate cause of the attack, and the existing symptoms. If we are told that the patient has had many similar attacks, has been long addicted to the excessive use of ardent spirit, and that the immediate cause of his present condition is great excess; if he display no great bodily strength; if his pulse be frequent and weak, his tongue dry and dark-coloured, with a pale subdued countenance, a different line of practice ought to be pursued from that which I would recommend in a patient whose health had been previously unbroken, and who was not habitually addicted to drinking. If such a person as the last mentioned, were seized with delirium and trembling after a solitary debauch; if the delirium were furious; the strength greatly increased; the limbs being sometimes spasmodically contracted; the pulse of moderate strength, and not above 100; and particularly if the tongue were moist, depletion must be employed. Whereas in the first case, the hope of recovery must depend upon the judicious and timely exhibition of stimulants. The kind of stimulant should be adapted to the rank of life and habits of the patient; but upon the whole, wine is the best, repeated in the quantity of a small glassful, every half hour in urgent cases, or every hour or second hour according to circumstances; attention must be paid to the bowels, and opiates and blisters used if necessary. A patient labouring under this form of the disease, would in all probability be destroyed by the loss of four ounces of blood.

In the second variety which has been quoted, if the disease have not existed long, a bleeding from the arm, in such quantity as the case requires, will

be found highly beneficial ; but should the disease have gone on for any length of time, the same objections were made against bleeding in the former case are equally applicable to this. But instead of stimulating, we must trust to the exhibition of powerful purgatives, shaving the head, and applying cold to it, with sinapisms to the feet, or blisters to the legs. In some instances local bleeding will be proper, when that from a vein is totally inadmissible. The observations already so frequently and so pointedly made in different parts of this work, with respect to venæsection, and the difference in the results to be expected from that remedy according to the period of the disease, need scarcely be repeated in this place. But it may be again stated, that bleeding is often a doubtful, and sometimes even a dangerous remedy in this affection, when the pulse is exceedingly quick, say 130 or 140, and still more so, if at the same time the tongue be dry and parched ; whereas it is at least a comparatively innocent remedy, if the opposite state of the pulse and tongue exist. Considerable caution is also required in exhibiting opiates ; if the patient be restless and watchful, an opiate can at least do no harm, and is often of signal service ; but if there be a tendency to coma, an opiate will, in general, prove hurtful.

## PART VI.

---

DISEASES OF THE EYE AND EAR.





## CHAP. I.

### GENERAL REMARKS ON THE DISEASES OF THE EYE.

---

THE eye is one of the most sensible and delicate organs of the body, and from its situation and functions is liable to many accidents and diseases, the nature and treatment of which are now happily much better understood than formerly. It is my intention to avoid noticing the surgical diseases of the eye, and to confine myself entirely to the consideration of those strictly medical, which will include inflammation of the different tissues of which the eye is composed, and the lining membrane of the eye-lids, together with the diseases of the optic nerve.

In the last century, uneducated quacks were chiefly employed in treating diseases of the eyes, which was no doubt owing to the general ignorance which prevailed on the subject. In the present day, we find a class of well educated men called oculists, who devote their time and attention exclusively to this branch of the profession. There can be no doubt that advantages are gained, both by the profession and the public, from a division of labour; but every individual, whatever particular department he may choose to cultivate and practise, should have previously gone through a good general medical education. Many of the diseases of the eye depend upon a variety of constitutional causes, which must be understood before we can cure or alleviate the diseases which they produce. It is now generally admitted, that every individual in the profession should be able to treat the diseases of the eye with the same facility with which he can manage those of any other organ. The surgical diseases of the organ of vision are certainly more complicated, requiring a delicacy of hand, and quickness of eye, which many do not possess; but those which fall under the care of the physician are similar to diseases of other parts of the body, though at first perhaps somewhat more difficult to understand and treat. Students of medicine of the present day will have themselves to blame, if they undertake the responsibility of general practice without a competent knowledge of this subject, as at every school of medicine in this country, an establishment especially devoted to diseases of the eye exists, superintended by medical men of eminence in this department. I am happy to have this opportunity of speaking in terms of high

commendation of the arrangements of the Eye Dispensary of Edinburgh, under the able management of Drs. Robertson and Farquharson.

The Germans are exceedingly and needlessly minute in their classification of diseases of the eye. According to Plenck's arrangement, there are one hundred and nineteen genera, and very nearly six hundred species. Dr. Mason Good, in noticing this division, observes: "A regard to *our own ease* may dispose us rather to take with the abbreviating spirit of Dr. Cullen, than the discursive genius of Dr. Plenck." I think, that a regard not only to our own ease, but to the ease, comfort, and safety of our patient, ought to induce us to do so; as it is scarcely to be believed, that any practical man can carry in his head the one hundredth part of the distinctions of the Germans.

Inflammation of the eye may be divided into external ophthalmia, or inflammation of the conjunctiva in its principal modifications; and deep-seated ophthalmia, or inflammation of the other tunics, including the disease called amaurosis, which, although not always, is sometimes produced by inflammation. These are subdivided into acute and chronic inflammation of the part affected.

I shall now give a general but brief account of the phenomena of inflammation of the eye, its causes, and treatment, before proceeding to consider the individual diseases. The general symptoms differ little from those of inflammation in other parts of the body, and only in as much as they undergo modifications from the peculiar structure and functions of the organ. Inflammation of the eye may be confined to one tunic, whence it often extends to surrounding tissues, and may spread in this manner till the whole organ is affected; or it may attack the whole eye-ball at once, although this must be an extremely rare occurrence. The disease may be confined to one eye, or may affect both simultaneously; or first one eye, and then the other, may be affected. Almost universally the disease attacks the same tissue in each eye, whether it be the iris, the conjunctiva, or the retina. Inflammation affecting one particular tissue of the eye, whether it be of an acute or chronic character, if not invariably, is generally characterized by some peculiar symptom or appearance; thus, inflammation of the conjunctiva may be readily distinguished from inflammation of the retina, and both from that of the iris.

*Symptoms of inflammation of the eye.*—These may be divided into local and constitutional. The local symptoms are first a sensation which would be produced by a grain of sand in the eye, followed by a sense of heat, and pain in the eye-ball, increased secretion of tears, intolerance of light, and a feeling as if the eye-ball were swollen. On making an examination, a net-work of vessels transmitting red blood is seen, although in a state of health they contain a colourless fluid. If all these symptoms be present, and continue for any length of time, no individual, however uninformed, can be in doubt respecting the existence of inflammation. But it often happens, that very severe inflammation of the internal parts of the eye may be going on without any external redness or unusual vascularity; and cases occur, which termi-

nate in the total destruction of vision, unaccompanied by much pain. Thus, Dr. Robertson was called to a case some years ago, in which both eyes were completely disorganized within twenty-four hours from the commencement of the inflammation, and yet the patient complained but slightly of pain. Intolerance of light is not always complained of in an external ophthalmia, at least at the beginning of the attack, in proportion to the intensity of the inflammation, but it is a prominent symptom of inflammation of the internal parts of the eye. Instead of an increased flow of tears, a preternatural dryness of the eye may take place, particularly when the diseased action is intense. Swelling of the eye-lids take place when the inflammation attacks their lining membrane; they then sometimes become very much tumified, which is by no means an unfavorable symptom.

The observations which have been so often repeated in this work respecting other inflammatory affections, viz. that symptoms vary much according to constitution; and that an important organ may be undergoing considerable changes of structure, without producing the regular train of symptoms, either as to number or intensity, apply equally to ophthalmia.

Severe inflammation of the eye is frequently attended by headache, nausea, prostration of strength, constipation, and febrile symptoms. When the internal coats of the eye-ball are inflamed, there are generally more pain, headache, and fever, than in conjunctival inflammation. These are termed the constitutional symptoms.

*Causes of inflammation of the eye.*—These causes are numerous and diversified; few can be said to be peculiar, the great majority being such as are well known to occasion disease in other organs of the body. They may be divided into two classes:—1. External or local; 2. Internal or constitutional. Among the first are included sand, dust, lime, small insects, the irritation produced by tumors growing within the eye-lids, and inversion of the eye-lashes. Of these, the application of lime is the most injurious, from its well known property of destroying the vitality and texture of animal tissues. In all of these cases, a very minute examination of the eye should be made. Morgagni relates the case of Thomas Mangelli, a relative of his own, who had a dangerous and protracted ophthalmia. His physicians and surgeons believed that an ulcer had formed in the cornea from inflammation, and a variety of internal as well as external measures were adopted, but without the least advantage, until one of the surgeons discovered the wing of a small fly in the bottom of what had previously been considered an ulcer. The patient recollected that an insect had flown into the eye a little before the inflammation commenced, and that it had been killed by the application of his hand; the wing had remained closely applied to the cornea, where it brought on inflammation, and the surrounding swelling represented the lips of a small ulcer. Soon after the foreign body was removed, the eye recovered.

Acid fumes and vapours are fruitful sources of ophthalmia; as also the application of gonorrhœal virus, the discharge from a syphilitic ulcer, or indeed,



acid matter of any sort. These are powerfully aided by intemperance. There can be no doubt of the influence of climate in producing inflammation of the eye; the colder regions of the world are comparatively exempt from these diseases, while they are frequent and peculiarly severe in warm countries. Many writers have accounted for this circumstance, by attributing it to heat, light and dust. It cannot be disputed that any sudden exposure of the eyes to great heat or light, is very hurtful to vision; and under all circumstances, long continued exposure without intermission to light and heat, even when neither are very intense, must be injurious. Egypt appears to be the country which of all others is most favourable to the production of ophthalmia. The English and French troops employed in that country in 1801, were harassed by the general prevalence of the disease; and in the subsequent expedition the English troops were equally affected. Nevertheless I am inclined to believe that these causes are very much overrated, and that sudden atmospheric changes, and the disgraceful intemperance of British troops, have far more influence in producing inflammation of the eyes, not only in warm climates, but in our own, than is generally admitted. It is not uncommon for ophthalmia to appear like an epidemic in this country during the spring and autumn months; and it has been remarked to take place in seasons when there were considerable and sudden changes from heat to cold, more particularly if attended by moisture. In warm climates these vicissitudes are more severely felt by the constitution. It will not require any laboured argument to shew that these causes affect the eye by producing alterations in the balance of the circulation, and not so much in consequence of any direct effect on the eye itself. It is but fair to mention, however, that I have myself experienced considerable annoyance from the effect of light in warm climates, but not so much from the sun's rays falling upon the eye, as from the reflection produced by white sandy roads, and white-washed houses, the sensation being quickly removed upon getting into the shade, or walking upon grass.

Among the constitutional causes may be enumerated general plethora, disordered state of the bowels, suppression of any discharge which had previously existed for a considerable time, including the constitutional discharges peculiar to the female, dentition, general chronic disease of the mucous membranes, the diseased state called scrofula, acute and chronic diseases of the skin, the retrocession or metastasis of inflammation to the eye during the progress of gout and rheumatism.

Some of the most severe and intractable diseases of the eye take place during the decline of small-pox, scarlatina, measles, and other diseases of the same class, and constitute one of the numerous evils commonly denominated the "dregs" of these diseases.

*Treatment of inflammation of the eye.*—After the sketches which have been given of the symptoms and causes of inflammation of the eye, it is necessary in this place to give a very short account of the remedial means; but it must be premised, that some remedies are applicable to inflammation of one tissue,

and some to that of another. Inflammation of the *iris* may be adduced as an example, in which the action of mercury is peculiarly beneficial. The treatment must vary also with the cause of the disease; if it be produced by acrid vapour, by the damp or exposed situation of the residence of the individual, or by particles of dust engendered during a person's trade or occupation, removal from the cause must in general be insisted on, before we can promise success. If any foreign body be lodged in the eye, it must be extracted; and this frequently requires some nicety, if it be imbedded in the coats of the eye, or in the cornea. Foreign bodies, however most frequently lodge under the superior palpebra, and when their existence is suspected, the eye-lid should be completely everted. Cases are sometimes met with, particularly of slight inflammation of the *conjunctiva*, in which a spontaneous cure takes place; but as such a termination is doubtful, and always slow, we ought to pursue the proper course of treatment. Many cases yield to the application of warm vapour, warm anodyne fomentations, or astringent washes. These simple remedies, together with due attention to the bowels, and confinement to an apartment moderately lighted, will often have the effect of subduing the inflammation. But in severer cases of external inflammation of the eye, and in all deep-seated inflammations of that organ, more powerful measures must be used. Of these, general bleeding stands the foremost, and is more particularly indicated when the symptoms of inflammation run high,—when the eye cannot bear a moderate light,—and when there is a darting pain through the head.—The indication is still more obvious, if there be fever with a hard pulse; and more particularly still if the patient be plethoric. The quantity of blood drawn should be proportioned to the urgency of the symptoms, the age, peculiarities of constitution, and habits of the patient. The importance of general bleeding in many cases of ophthalmia, has been long known to the profession; but, like most of the potent remedies employed for the cure of this and other diseases, it has sometimes been held in great estimation, and at others sadly decried. It is now above twenty years since the disease called the Egyptian ophthalmia created such ravages in the British army, having the double effect of crippling its exertions, and entailing a heavy expense upon the nation, in the shape of pensions to soldiers who had lost their sight; and when I first entered the army, in the early part of the year 1808, I soon observed sufficient to convince me, that the bad success was owing to injudicious treatment, particularly relating to four most essential points:—1. The older military surgeons, upon whom the treatment devolved, did not seem to be acquainted with the different seats of the inflammation. I never saw any distinction made by one old surgeon, whose wisdom and knowledge were generally admitted and highly extolled, between inflammation of the *conjunctiva*, and that of the *iris*; 2. It was matter of surprise to find that eyes were lost in the course of a day or two, when the symptoms were apparently mild, and they seemed to expect to meet with a severe and rapid disease only when there were violent symptoms, and the chief symptom they depended upon was pain;

3. They appeared to be unable to discriminate between acute and chronic inflammation, which often led them to apply local stimulants most injudiciously ;

4. A great deal of the bad success was owing to a systematic plan of taking from all subjects, whether old or young, weak or strong, exsanguined or plethoric, the precise quantity of twelve or sixteen ounces of blood. While acting under an old surgeon, the plan of treatment ordered to be pursued, when a man came into hospital was,—“Bleed him, Sir, to 16 ounces, and give him salts.” If the patient happened to be better at the next day’s visit, an order was given to apply a stimulant, generally the *vinum opii*. On the following day, if he were worse, the order was,—“Bleed him again, Sir,” and this alteration of practice,—bleeding one day only to weaken the system, without making any decided impression on the disease, and applying local stimulants the next, before the acute inflammation was subdued,—appeared a most decided error in the treatment. So strong was the impression made on my mind, that one day three men were received into hospital, whom I was desired to bleed, and not considering, or perhaps disregarding the consequences of deviating from the regular plan, I bled each of them to syncope, which required the abstraction of from 25 to 35 ounces of blood. The men made rapid recoveries ; but the transaction would have cost me my commission, had I not had powerful friends at court.

I knew another surgeon, who, although he used to bleed in cases of ophthalmia, place his chief dependence on Dover’s powder. To shew how much the Government was alarmed for the state of the army, it may be mentioned, that a male and female quack was hired to take charge of the cases in a certain military hospital ; but, as might have been expected, their mysteries and mummeries failed altogether in checking the ravages of the disease.

On a subsequent occasion, a medical gentleman joined the army with high pretensions as an oculist. He introduced the practice of everting the eye-lids, which was done in all cases, for the purpose of applying stimulants ; and I attributed the loss of a great number of eyes to the indiscriminate employment of this operation, together with not distinguishing the difference between acute and chronic inflammation, as well as between superficial and deep-seated inflammation of the eye.

One bleeding will in general suffice, but it should be carried far enough to affect the constitution. Drawing blood from the temporal artery has been strongly recommended by many. I have seen it often practised, but was never sensible of any superior advantage derived from this method ; and it may be mentioned, that some practitioners of reputation consider it rather injurious. The application of leeches is the most gentle method of taking blood from the vessels in the neighbourhood of the eye ; they may be placed either upon the forehead, the temple, or the cheek immediately below the eye. Some object to this means, because the leech-bites occasionally produce considerable swelling, and inflammation of the eye-lids, now and then assuming a erysipelatous character ; but it should be recollected, that this will only happen in



cases where there is a bad habit of body, in which circumstance the application may be avoided. Cupping the neck may be had recourse to, either when leeches cannot be obtained, or when it may not be convenient or proper to employ them. In conjunctival ophthalmia, particularly when the lining membrane of the palpebra is vascular, the application of the sacrificator to the everted lid will be found very beneficial, and is a speedy method of taking a considerable quantity of blood from the part affected; but is only to be had recourse to in certain cases hereafter to be noticed. A modification of this last practice has been recommended by Mr. Crampton, (3d vol. Dub. Hosp. report,) which is, to apply leeches to the everted mucous membrane of the lower palpebra.

The beneficial effects of the most judicious and copious abstractions of blood will, however, soon be lost, unless followed by other important means, such as, the keeping up a moderately brisk discharge from the bowels, and the use of antimony. Blisters applied either to the neck, or behind the ears, are often serviceable; and in cases of chronic inflammation of the conjunctiva, when the mucous membrane of the intestinal canal is in a state of great irritation I have found it very beneficial to apply the tartar-emetic ointment to the abdomen, alternately with leeches to the epigastric region; it is in such cases that the frequent use of the warm bath proves beneficial.

In acute and even sub-acute inflammation of the eye, the employment of the antiphlogistic regimen is indispensably necessary; but I apprehend that practitioners too frequently run into an extreme, by preserving in the use of slops and low diet for too long a period to the injury of the functions of the stomach.

With respect to local applications, some practitioners have great faith in cold lotions of different kinds, and others in warm fomentations, consisting merely of warm water, or its vapour; a decoction of chamomile flowers, or of poppy-heads. Whether applications are to be warm or cold may be safely left to the feelings of the patient, although the former appear in a majority of instances to be the most soothing. Poultices are used by many, but they are not so serviceable as fomentations; and if there be any tenderness, it is increased by the weight. In pustular ophthalmia, as well as in chronic inflammation of the conjunctiva and cornea, stimulants are most conducive to the cure, and perhaps the best is the *vinum opii*. In such conditions, astringent washes are also used in the proportion of one or two grains of the *acetate of lead*, or *sulphate of zinc*, or from one to seven or eight grains of the *sulphate of alumina*, to the ounce of water. A solution of the *nitrate of silver* is also employed in different conditions of the eye, as in chronic inflammation of the conjunctiva, and inner membrane of the eye-lids, as well as the ulceration of cornea. Emetics have occasionally been found serviceable in some long-standing cases of conjunctival ophthalmia.

Experience has proved that the action of mercury is almost indispensable in inflammation of the iris; but is by no means to be depended upon, to the exclusion of general and local bleedings.



Notwithstanding the general opinion which prevails against the administration of opiates in the disease under consideration, I would strongly recommend them in cases where there are great pain and want of sleep, after the employment of proper depletion. The dose must be proportioned to the urgency of the pain, as well as the degree of constitutional irritation; in severe cases, I have given, with benefit, 60 drops of laudanum, or 30 of Battley's sedative solution; but in either case the dose should be repeated, with half the quantity, in the course of two or three hours, if necessary.

So long ago as the year 1807, Mr. Wardrop recommended the evacuation of a part of the aqueous humour, by making a puncture in the cornea, in cases of very violent inflammation of the eye-ball, when the pain is intense, the eye prominent, and the cornea slightly opaque; and more particularly when the case appears to resist other treatment. I cannot speak of this operation from experience; but it appears to have been performed in a few instances with benefit.

## CHAP. II.

### INFLAMMATION OF THE CONJUNCTIVA.

---

1. SIMPLE inflammation of the external covering of the eye, including what is termed by authors *ophthalmia mitior et gravior*; 2. Simple catarrhal ophthalmia; 3. Purulent ophthalmia, the description of which will be drawn from the disease as it occurs in infancy; 4. Pustular ophthalmia.

1. *Simple inflammation of the external covering of the eye.*—The conjunctiva, from its situation, is of all parts of the eye most liable to inflammation. In the natural state, it is rare to see vessels carrying red blood, but on the slightest irritation the vessels of this membrane become injected. It is only in the most intense inflammation of some days continuance, that we see vessels on the surface of the cornea.

*Symptoms of simple inflammation, &c.*—A sensation of itching takes place, sooner or later succeeded by pain, resembling that which is known to be produced by sand, or dust when applied to the eye; redness, heat, tension, and throbbing follow, aggravated when the eye is moved, and upon the admission of light. An increased flow of tears is observed, sometimes scalding the cheek, or an unusual dryness of the eye from suppression of tears, which last adds greatly to the pain. In severe cases, the pain shoots from the eye-ball, as it were through the head, or affects the scalp on the forehead over the affected eye. In some instances, there are febrile symptoms, with a full, strong, bounding, or hard pulse, generally preceded by rigors or slight chilliness. If the symptoms are mild, the disease is called *ophthalmia mitior*; if severe, *ophthalmia gravior*.

On examining the eye in the acute stage of the disease, the vessels are observed to be superficial and distinct, running in straight lines, leaving the intervening spaces of a slight pinkish colour; and when the small branches are also well injected with red blood, the conjunctiva has a uniform red appearance; whereas, when the disease is chronic, the vessels become tortuous in their course, assume a purple colour, and are capable of being rolled about from the looseness of the connecting cellular tissue. We judge also of the change in the character of the inflammation by the cessation of the severe throbbing pain, and by the greater tolerance of light. In some cases of the description now under consideration, as well as in those of the affection which

has been denominated *purulent ophthalmia*, the conjunctiva becomes swollen, having a red, granular, somewhat fungous appearance, and considerably elevated above the cornea; this state is called *chemosis*, and is frequently confounded with *ecchymosis*, which also takes place occasionally, not only in chronic, but in acute inflammation of the eye. *Chemosis* is occasioned by thickening and vascularity of the conjunctiva, with an œdematous state of the subjacent cellular tissue. We see on some occasions also an accompanying œdema of the eye-lids, which become much swollen, and occasionally a red fungous state of their lining membrane takes place. In these circumstances, there is some puriform secretion.

*Treatment of simple inflammation, &c.*—In the milder forms of the disease, general bleeding is unnecessary; but if the complaint do not yield to other remedies, it would be wrong to delay opening a vein, particularly if the pulse, be hard, or if there be much excitement in the system. In severe cases, one prompt and copious bleeding will be necessary, followed by the application of leeches, fomentations, strong purgatives, the solution of tartar-emetic, and blisters, as the urgency of the symptoms may require. It is important to consider what the circumstances are which we have to dread;—puriform effusion into the cornea, together with opacity, thickening, and ulceration; and the extension of the inflammation to other tissues. Chronic inflammation of the conjunctiva may take place under two different circumstances, viz. either as a consequence of previous acute disease, or as a slow inactive inflammation. In either of these cases, the eye has the appearance formerly described; and the practice which I would recommend, is to pay more attention than is generally done to the constitution; the condition of the mucous membrane of the stomach and bowels should be carefully investigated in the manner so fully pointed out in this work. In chronic inflammation, it may sometimes be found of great service to scarify the eye-lids, if there is much vascular turgescence of their lining membrane; astringent and stimulating washes must be had recourse to; it is in these cases that the solution of nitrate of silver is found useful, together with the wine of opium, and an occasional blister. It has been recommended to divide the trunks of the small vessels just before they enter the cornea, when there is any tendency to opacity, and when red vessels are seen on that part; and although it may be beneficial in some cases, yet I have seen it injurious in many, by producing additional irritation.

#### SIMPLE CATARRHAL OPHTHALMIA.

THE particular affection which I wish to denote under this term, is one of very common occurrence in this country, being the effect of sudden alterations from heat to cold; it is in fact called by the vulgar, “a cold in the eye,” and generally speaking, is to be considered as a mild description of *purulent ophthalmia*, which disease, in its more aggravated form, is known by the appellation, *Egyptian ophthalmia*—occurring after the application of gonorrhœal virus to the eye, *gonorrhœal ophthalmia*—and taking place in infants, *infantile puru-*

*lent ophthalmia.* They are all the same disease, requiring the same treatment modified by the patient's age and peculiarity of constitution, and by the urgency of the case.

*Symptoms of simple catarrhal ophthalmia.*—After exposure to cold, soreness of the eye is complained of, either preceded or accompanied by chilliness, and a feeling of general uneasiness, with lachrymal discharge, sneezing, and sometimes aching pains in the bones, and some degree of fever. It is a slight inflammatory affection of the conjunctiva; but the inflammation is in some cases so very great as to destroy the eye. In addition to pain, intolerance of light, and the other symptoms described in the last section, we find a puriform discharge, and some swelling of the eye-lids. The eye-lids, though frequently washed, quickly become glued together by the drying of the matter, so that, in making examinations, as well as in cleaning the eye, great mischief is frequently done by forcibly opening the lids, and thereby producing additional inflammation. After the disease is a little advanced, the eye, upon examination, will sometimes be found in a state of chemosis, and we should make at least one daily inspection to ascertain the state of the cornea. If there be no opacity or dimness of the cornea, and no vascularity or ulceration on its surface, the case may be regarded as doing well; but should any of these circumstances be observed, the loss of vision may be dreaded.

*Treatment of simple catarrhal ophthalmia.*—The same general plan of treatment as recommended in simple inflammation of the conjunctiva should be had recourse to. Attention must be paid to discover when the disease has passed into the chronic stage, that we may have recourse to remedies of an astringent nature; care should be taken to keep a small piece of linen twice folded constantly applied wet to the eyes; at all events the eyes should be well soaked with some tepid fluid, before any attempt is made to separate the palpebræ. I shall have to speak hereafter of the proper plan of treatment, when ulceration of the cornea takes place; I shall now only further mention, that the inner membrane of the eye-lids is frequently left, at the termination of the disease, in a soft, swollen, spongy condition. Should the ordinary astringents fail, the scissors of the surgeon, or what perhaps answers fully better, the application of a piece of lunar caustic, may be used once every third day, taking care to evert the eye-lid completely, and to bathe the part with a little milk the moment after the caustic has passed over its surface; this renders it innocent to other parts of the eye. In the acute stage, the warm bath and antimony will be found peculiarly serviceable, as well as repeated doses of Dover's powder.

In cases where the introduction of syphilitic virus into the eye is suspected, it must be left to the discretion of the practitioner whether to use mercury or not. Perhaps it ought not to be given in the first instance; but in the case of syphilitic, gonorrhœal, or any other acrid matter producing inflammation, the knowledge of the fact should lead us to watch the progress of the case more anxiously, and be ready to apply the most potent remedies speedily,



should they be necessary from the extent and intensity of the inflammation. An interesting case may be mentioned, which terminated very fortunately :—A young man came to the hospital with violent inflammation in one eye, attended with slight purulent discharge ; he complained of excruciating pain both in the eye and head, and a large ulcer was discovered on the cornea. Upon examination, a purulent discharge was observed coming from the urethra, although he had previously denied the existence of gonorrhœa.

Notwithstanding the advanced stage of the disease, I instantly resolved to open a vein, as he was stout and plethoric, and as his pulse was strong and hard. There was little probability of saving the eye, and it was fully expected that the contents of the eye-ball would escape in twenty-four hours ; but it was necessary to mitigate his sufferings, which he described to be agonizing. The blood was allowed to flow till the approach of syncope. Slight epileptic convulsions followed, which went off immediately upon his being laid down on the floor ; he was now in an extreme state of weakness, and was threatened with a return of the convulsions upon making the least exertion, as well as when he was raised for the purpose of being placed in bed. When in this state, it was a matter of surprise to me, to find scarcely a trace of one vessel upon the eye, which had a few minutes before been exceedingly vascular, and the ulcer on the cornea already appeared as if it had received a death blow. The blood was accurately weighed, and the quantity found to be fifty-six ounces. In a day or two a slough separated, and the ulceration was found to have extended throughout the whole depth of the cornea ; the only part which remained was its lining membrane, which was pushed out by the aqueous humour, forming an appearance like a hernia. From this time the healing process continued ; the cicatrix which afterwards formed, at first interfered with the sphere of vision, but the patient could see all objects above him ; gradually, however, the cicatrix diminished in size, a very slight speck is left on the lower part of the cornea, and vision is now quite perfect.

#### PURULENT OPHTHALMIA OF INFANTS.

The disease of which I have now to treat, is an inflammation of the *tunica conjunctiva* of the eye ; occasionally attacking children soon after birth, and frequently, when unopposed by proper means, rapidly destroying the structure of the eye, by producing alteration of texture of the cornea, and sometimes, though rarely by extending to, and injuring the deep-seated parts of the eye. It is now many years since this disease first attracted the notice of medical men, but we had no good description of it till Mr. Ware, a celebrated ophthalmic writer and practitioner, published an account of it, and he was soon followed by several continental writers, particularly by Reil and Schmidt in Germany.

The *tunica conjunctiva*, and the reflection of it forming the lining membrane of the eye-lids, has been considered, and I believe very properly, as a mucous membrane. It is the principle seat of the disease, and undergoes a change, when inflamed, analogous to that of other membranes of the same class.

*Symptoms of purulent ophthalmia.*—The date of the attack after the birth of the child varies. I have detected it on the second day, and it may occur at any subsequent period; but, generally speaking, it takes place before the sixth week, usually during the course of the first fourteen days. It may attack one eye only, but it commonly happens that both eyes are simultaneously affected.

It is often difficult, if not impossible, to write a good description of the symptoms of a disease in infancy, but I shall here record nothing but what I have noted down at the bedside. A child affected with purulent ophthalmia, is observed to be very restless and fretful, particularly when exposed to light, although it keeps the eye-lids firmly closed; it never opens them to look about, as infants usually do, who are readily attracted by the light of a candle or the blaze of a fire. At the onset of the disease, a slight redness is first observed on the conjunctiva lining the eye-lids, especially about the inner canthus, attended with a secretion of whitish matter. There are generally observed also some heat of skin, and a foul tongue. The eye-lids soon appear red and swollen, or the eye-lashes are found matted together by a glutinous exudation. Whenever any of these appearances are observed, the eye should be minutely examined, after it has been properly soaked with warm milk and water, so as to soften the matter which seals the lids together. On no account ought the examination to be proceeded in before this preparatory step is fully accomplished, as I have seen great mischief done by nurses, and impatient medical men, by forcing open the eye-lids, thereby occasioning great immediate suffering, and subsequently increasing the inflammation.

I hope to be excused by those medical men who largely indulge in the filthy habit of taking snuff, for urging upon them the necessity of taking care that the fingers employed in opening the eye-lids are clean, and that they keep their noses in such a situation, that none of the noxious herb may fall into the eyes of the poor little sufferers. As the disease proceeds, a discharge of tears mixed with the secretion takes place when the eye-lids are separated, and the itching is so great that the fingers of the child can scarcely be kept away from the eyes; swelling of the eye-lids soon follows; the discharge increases in quantity, becomes more puriform, and sometimes so acrid as to excoriate the cheeks.

The inflammation, if it have not already affected that part of the conjunctiva which covers the eye-ball, soon extends to it; numerous blood-vessels are seen of a bright scarlet colour, sometimes giving the appearance of chemosis; the quantity of matter is occasionally very great indeed, and when the eye-lids are allowed to be glued together for some time, it collects, producing great distention, and when they are opened, a tea-spoonful or two of puriform matter gushes out. In neglecting cases we discover disease in the cornea, perhaps on the first examination, or that it is already destroyed. The external skin of the eye lids in some cases become affected, being red, swollen, and of a livid colour, particularly when the infant struggles or cries. The inflammation in some instances extends to the lachrymal sac and duct,

and lining membrane of the nose, from which a similar puriform fluid is discharged.

As the complaint advances, portions of the cornea put on a dusky appearance, become elevated, and in the course of perhaps twenty-four hours, a process of separation commences. The slough, when thrown off, leaves a ragged ulcer of an ash colour, the bottom of which is coated with a brownish matter. These sloughing ulcers vary in number, generally there is only one, sometimes there are several, and occasionally the whole cornea sloughs at once. As soon as one slough separates, another begins to form, which process goes on, if the disease be not arrested, until the ulcer penetrates into the anterior chamber of the eye, when the aqueous humour is discharged and the iris pushed through the opening. The ulcer on the cornea may not be disposed to heal, or may enlarge, allowing more and more of the iris to protrude, which in its turn ulcerates; at last it happens in some neglected cases, that the lens and vitreous humour are expelled, and vision is forever destroyed. In some rare instances, with or without opacity, or ulceration of the cornea, the inflammation extends to the deep-seated parts of the eye, and vision may be destroyed by internal disorganization.

Such is a general outline of this disease in its most malignant form, when allowed to run its course, or when the inflammation is aggravated by improper treatment,—a disease which, when early opposed by proper means, is seldom productive of any bad effects. When the inflammation is arrested at the period that the cornea first begins to slough, opacities or small specks are generally left; but when it advances still further, and the iris is protruded, staphyloma is generally the consequence.

It has been supposed by some authors, that the acrid discharge produces the ulceration of the cornea,—by others that the cornea begins to ulcerate from within; but I believe the best informed practical men are convinced, that both opinions are erroneous, and that the disorganization of the cornea arises solely from the violence of the inflammation; and it is highly important to keep this fact in view.

Much irritation and discharge are sometimes kept up for a considerable period by a diseased state of the lining membrane of the eye-lids, which, when examined, present a swollen, spongy, granular appearance, and more or less of a red colour. This state of parts frequently occasions relapses, till at length chronic inflammation steals slowly on some tissue of the eye-ball itself, which ultimately impairs or destroys vision.

*Causes of purulent ophthalmia of infants.*—These are stated to be various. The most common are cold and damp, exposure to too much light and heat, to which infants are very liable when nursed in the lap, and to smoke or acrid vapours; and I believe it is occasionally produced in consequence of mechanical injury inflicted on the conjunctiva by the child's own nails. Purulent ophthalmia is said, by some, to be produced by the direct application of acrid matter to the eyes of the infant during parturition. This is very probable



if the mother be affected with syphilitic chancres, or gonorrhœal discharge ; but on the other hand, I have known many women so diseased, whose children were not attacked by purulent ophthalmia. Others maintain, that it is invariably produced by the peculiar discharge called the *whites* ; but experience completely disproves this assertion, for if it were the case, scarcely a new-born babe could, by possibility, escape, as a very large proportion of women are affected with whites during pregnancy, particularly in the latter months.

*Treatment of purulent ophthalmia of infants.*—Regarding the disease, in severe cases, as one of intense inflammation, the treatment is easily understood. The only difficulties with which practitioners have to contend are, first, to determine whether or not the disease be too far advanced to admit of any hope of success ; and secondly, whether or not the inflammation has yet become chronic. With respect to the former, it may be stated, that long standing and most unpromising cases occasionally do well under the active management which is here recommended. We must not allow ourselves to be guided by the number of days the disease has existed, but by the state of the eye itself after minute and careful examination, comparing that with the constitutional symptoms, together with the strength and peculiarities of the patient. With respect to the second difficulty, some experience is no doubt required. The appearances presented by chronic inflammation, however, have been already fully described, and must be kept in recollection.

It has been already stated, that both eyes are generally simultaneously inflamed, but one eye is found to be more intensely affected than the other ; young practitioners must be upon their guard not to fall into a common, but very natural error, of directing their sole attention to that organ which is in the most dangerous condition, to the comparative neglect of the other, which, when subsequently examined, is too often found to be irreparably lost. General bleeding in early infancy is altogether out of the question, therefore we must have recourse to leeching ; and most infants stand the effects of the application of two leeches remarkably well, if the draining of blood be not allowed to go on too long. If both eyes be affected, a leech may be put on each temple, within about half an inch of the external canthus of the eye, for when applied too near the part, the loose tissue of the eye-lid becomes swollen, inflamed and ecchymosed, creating alarm, and an impression in the minds of those most interested, that the abstraction of blood has done harm. This opinion may make them unwilling to repeat the application of the leeches, which should be done, perhaps, every four or six hours, according to the strength of the patient, till the violence of the disease is subdued. The bowels are to be acted upon by two or three smart purgatives repeated at short intervals, such as one grain of calomel combined with two grains of scammony ; but subsequently milder means may be had recourse to. It is of great consequence to keep the eyes clean, not because the matter, if allowed to lodge, would injure the cornea, but to prevent it from sealing the lids together.



This is best effected by keeping the infant upon its back, while a small piece of wet linen rag is applied to each eye, and a little milk and water dropped occasionally upon the inner canthus. The necessary precautions already mentioned, before any attempt is made to separate the lids, must be carefully observed. I have seen much mischief done by the incautious and too frequent use of the sponge, as well as by injecting fluids between the eye-lids, an operation which ought never to be confided to a nurse.

With respect to the operation of scarifying the lining membrane of the eye-lids, I have often had doubts whether it did not do more harm than good; and in many instances, I have seen it decidedly injurious. Experience has taught me, however, that it is one of the most effectual parts of the treatment, not only in the chronic, but in the acute stage, after the intensity of the disease has been somewhat mitigated by the application of leeches, and the administration of purgatives. The scarifications are to be made very slightly, as their edges sometimes suffer from subsequent irritation and inflammation. To procure the full effects of scarifying, the eye-lid should be carefully everted, the child steadily held, and a large quantity of blood allowed to flow before the part is returned; to effect which, the scarificator should have a very fine edge; and instead of wiping the surface with a warm sponge, it should be done with a piece of dry soft linen. Scarifications are also occasionally of great use in the chronic stage, when the part is very vascular; but they are seldom serviceable, and often injurious, after the membrane becomes soft, spongy, and granular.

The light should be excluded from the apartment. In bad or doubtful cases, the state of the cornea should be minutely examined twice a-day, and once when the case is going on well. The warm bath ought to be used morning and evening; the diet should be restricted at this early period of life to the breast-milk. We judge of the effect of the remedies in reducing the disease, partly by the diminution of the constitutional symptoms, and quietness of the infant, and partly by the diminution of the discharge, as well as by the child opening the eye; but in order to ascertain this last point, it is necessary to watch its motions before light is admitted into the apartment, because the moment this takes place, the eyes will be closed, and the child will forcibly resist their being opened.

An occasional opiate will be found useful in allaying pain and irritation, and producing sleep. One drop of the sedative solution of opium forms a good full dose. The state of chronic inflammation has been already frequently alluded to, but perhaps in the circumstance now under consideration, it is a term not very happily chosen. After acute inflammation of the eye has subsided, the vessels are left in a gorged state; the swelling in the surrounding tissues gradually diminishes, leaving the vessels tortuous and loose, the blood contained in them being of a darker colour; the inflammation is destroyed, but the vascularity remains, and the remedies which subdue the previous action will, if continued, rather tend to increase than diminish it. At the

same time, I have to urge the remark which was made in the first volume, and which applies with double force to the diseases of such a delicate organ as the eye, viz. that practitioners are too meddlesome, and do not give sufficient credit to the restorative powers which a living organ possesses; or perhaps, from their own physiological and pathological dimness, they must always be doing something for appearance's sake. I have seen much mischief done by officiousness; therefore as soon as the inflammation is either nearly or altogether subdued, I follow a passive plan with respect to applications, and content myself with keeping the eye tolerably clean, and the eye-lids unsealed, at the same time that the precautions with respect to light, diet, and state of the bowels, are strictly attended to. In a day or too after convalescence has been established, an astringent, nay, even a stimulating application, may be necessary and serviceable, should the vascularity still exist, or should the mucous membrane be in the fungous granulated state already mentioned. Many use the application as a matter of routine practice, whether these conditions exist or not, so that they often irritate the eye, and produce relapses. Should the fungous granular state resist the use of ordinary means, caustic must be applied, or surgical aid obtained, and the part clipped or cut off, at first recommended by Reid, who, by the date of his work published in 1706, appears to deserve the merit of the originality of the plan, which has been of late years again brought before the profession by Mr. Saunders, and claimed as a discovered by Sir William Adams.

Immediately on the decline of the disease, some insist much upon the benefit to be expected from tonic medicines; but whatever may be said in their praise in old worn-out constitutions, their effects in early infancy are very questionable. In some cases, where considerable debility prevails, particularly where there is a somewhat exsanguined appearance, I find considerable benefit from the occasional exhibition of one, two, or three drops of brandy, mixed with a little milk from the nurse's breast. To many great and pompous practitioners, who depend much upon mystery, this plan may appear vulgar and unscientific,—let such people give a few drops of "Huxam's tincture of bark."

The experienced reader will have remarked, that the effect of blistering has not hitherto been noticed in the treatment; but it was purposely avoided, to be made the subject of my concluding observations. In the general remarks, I have already spoken of the advantages to be derived from the application of a blister to the temples, behind the ears, or to the back of the neck, in inflammation of the eyes; the same benefits may be expected in purulent ophthalmia; but in young infants, the blistered surface is liable to slough, and death will so frequently follow such an occurrence, that I entertain considerable repugnance at applying a blister to a new-born child; and it is impossible I shall ever forget the fright experienced on the last occasion I applied one in purulent ophthalmia. The case was severe; the parents had heard of the good effects of blistering, and I was urged by them to apply one. My objections

were honestly mentioned, but they still insisted ; and a blister was accordingly applied, with the precaution too of placing a piece of fine gauze between it and the skin ; a deep slough took place and the child made a narrow escape from death.

#### PUSTULAR OPHTHALMIA.

THIS disease appears to be a chronic, or perhaps, rather a sub-acute inflammation of the conjunctiva, speedily terminating in the formation of pustules. At the commencement these pustules have a red or yellowish appearance, slightly elevated, surrounded by a considerable turgescence of vessels, varying very much in size, number, and situation, and sometimes attended by considerable pain ; but at other times no inconvenience is complained of, either local or constitutional. It is a disease produced by exposure to cold.

*Treatment of pustular ophthalmia.*—In general this is a very manageable disorder, and is quickly cured by dropping into the eye a little *vinum opii*, or a solution of nitrate of silver twice a-day. But should the pustules be very painful, attended by headache and febrile symptoms, and, more particularly, should they be situated upon the cornea, where they sometimes leave ulcerations, more active means should be employed. A number of leeches must be applied, perhaps a vein opened, a few strong purgatives exhibited, and recourse had to the other means which are employed in cases of severe inflammation of the eye. After the acute inflammation is subdued, which we are to judge of by the diminution of the symptoms, the *vinum opii* may be used. Should ulceration take place upon the cornea, it is to be treated in the usual manner. I have been assured by Dr. Robertson, that much greater advantage has been derived from the application of blisters behind the ears, or to the nape of the neck, than from any other means.

## CHAP. III.

### INFLAMMATION OF THE EYE-BALL.

---

1. INFLAMMATION of the Sclerotic Coat.—2. Inflammation of the Iris.—  
3. Amaurosis.

1. *Inflammation of the sclerotic coat.*—Inflammation of the sclerotic coat is distinguished from that of the conjunctiva by the vessels being of a more pinky hue, by their lying deeper, and by their not being moveable on making the conjunctiva slide upon the sclerotic, by pushing the former membrane from side to side with the finger, the eye-lid being slightly interposed between the finger and the membrane. The pain complained of in this disease is of a rheumatic kind, and more uneasiness is felt in the different motions of the eye-ball; it is also in many instances vicarious with gouty and rheumatic affections of other parts of the body. In such instances, remedies which prove useful in rheumatism and gout are to be used, in addition to those required in simple inflammation. Of these I may mention, that I have seen great advantage result from the exhibition of colchicum, and Dover's powder. In almost every case of iritis, the sclerotic is found to participate in the inflammation.\*

2. *Inflammation of the iris.*—Inflammation of the iris received the denomination of *iritis* from Dr. Schmidt of Vienna, and by that term it is now generally known. The symptoms are of a very violent nature when the inflammation is acute, particularly after it has existed for twenty-four or thirty hours, when the patient's sufferings are often agonizing; severe pain over the eye-brow is rarely wanting, it commonly comes on in paroxysms. The constitutional symptoms are very similar to those which occur in other acute inflammations of the same organ, but there are local appearances which are highly characteristic.

In iritis, vessels are seen running in straight lines towards the cornea beneath the conjunctiva, but they suddenly disappear before they reach the

\* I have thought it unnecessary to treat of inflammation of the sclerotic coat at much length, because it is a disease which rarely takes place unless the inflammation be connected with gout or rheumatism, or have spread from other tissues. Neither shall I treat of inflammation of the choroid coat, although I believe it sometimes occurs uncomplicated. I must therefore refer my readers for more minute information on these subjects, to any of the numerous works upon the eye, and particularly to the "Compendium of the Diseases of the Human Eye," by Mr. Watson, of Edinburgh.



cornea, leaving a whitish zone round it. This appearance is peculiar, and no doubt arises from the vessels passing at this part through the sclerotic to be ramified on the inflamed iris. As soon as the zone appears, the iris loses its proper colour; in some rare cases it becomes distinctly red. Jannin relates a case in which the iris resembled a piece of raw flesh; Beer saw it of a blood-red colour, and Conradi observed it of the same colour after a wound of the eye. Dr. Robertson states, in a paper on iritis in the *Edinburgh Medical and Surgical Journal*, that more than once he has seen spots of a blood-red colour upon its surface. When the iris changes its colour, it first commences at the pupillary margin, and the colour it assumes when inflamed, is that which would be produced by a mixture of red blood with the natural pigment of the iris. The pupil becomes contracted and irregular, being slightly drawn upwards and inwards. It is also worthy of being mentioned, that the vessels in iritis, as in inflammation of the sclerotic coat, present a peculiar pink colour.

The retina sometimes becomes affected. This is indicated by greater sensibility to the impression of light, deep-seated pain darting through the head, and an appearance of sparks of fire and flashes of light before the eyes. If iritis be not speedily cured, it terminates by the effusion of small masses of lymph, sometimes even of blood, and more rarely by the effusion of puriform matter. The first mentioned terminations probably take place when the serous membrane covering the iris is principally affected, the last, when the substance of the iris suffers a high degree of inflammation. The effusion of lymph sometimes produces adhesions between the margin of the iris and the capsule of the lens, by which its motions are completely lost, the pupil subsequently remaining immoveable under every change of light. When the effusion is considerable, it is seen hanging in tufts from the pupillary margin, or stretching in bands across the pupil, and sometimes exists in such quantity as to destroy vision. Occasionally this effused lymph becomes organized, and red vessels may actually be traced by the naked eye. Another termination of the disease is by the formation of the abscess in the substance of the iris itself. Its situation varies, but for the most part is found on or near the pupillary margin. This abscess may terminate in two ways,—by bursting, as most frequently happens, and discharging its contents into the anterior chamber, forming the appearance which is called hypopion,—or, as the disease declines, by the absorption of the matter. In some rare instances it has happened, that ulceration has taken place after the discharge of the matter from the abscess.

In this disease the iris is sometimes pushed forward towards the cornea, assuming somewhat of a conical shape; and occasionally it comes in close contact with the cornea, now and then adhering to it by the pupillary margin, and generally by a single point. It has often been remarked, that when the iris of one eye is affected, the disease frequently attack the other, and sometimes both eyes are affected simultaneously.

*Causes of iritis.*—Cold is no doubt the most frequent cause of iritis; it may be also produced, as has already been stated, by the extension of inflammation from other tissues, as well as by external injuries, and the application of too stimulating remedies for the cure of acute external inflammation. It is alleged by most authors, and is very generally believed, that iritis is most frequently excited by the action of mercury, and it is rather a curious circumstance, that mercury is nevertheless exhibited for the cure of the disease, which it is alleged to have excited. This erroneous impression seems to have originated in the fact, that people, when taking mercury, have been attacked with iritis. If mercury were a cause of iritis, I ought to have been very familiar with the disease, when the use of mercury was more in fashion than it is in the present day; it ought then to have been a hundred times more frequent than at present; but this is not the case. There can be no doubt, however, that iritis, is apt to occur when a person under the influence of mercury, or any other debilitating remedy, has been exposed to cold.

*Treatment of iritis.*—At the commencement of the attack, one determined bleeding will do more good in checking the diseased action, than repeated small bleedings. The quantity of blood to be drawn must be determined by the peculiarity of the case, and by the circumstances already so fully mentioned. Subsequently, recourse is to be had to topical bleeding, repeated or not according to circumstances, and blistering. After the violence of the inflammation has been reduced by one general bleeding, our chief dependence is to be placed on the use of mercury, so as to affect the system very rapidly. This is a most important improvement in the treatment of iritis, for which we stand indebted to Dr. Farre, but it seems to have been known to Beer and other German oculists, long before its introduction into this country. The plan which I generally follow, is to give a grain of calomel every hour during the day, and five grains at bed-time in a pill, with a grain or two of opium; perhaps Dr. Robertson's plan is preferable—to give two mercurial pills every hour, combined with opium, if they affect the bowels with griping or purging. As soon as the system becomes affected with mercury, the patient experiences a very considerable abatement of the pain, as well as of the feeling of fulness and tension of the eye; the sight becomes improved and clearer; the redness diminishes; the iris assumes its natural colour; and the irregular and contracted state of the pupil, as well as the effused lymph, (if any exist,) begin to disappear. I can most conscientiously join those who state that they have often seen cases of iritis in which it was to be regretted that mercury had not been given, and that they never had occasion to regret having prescribed it. When the "*hydrargyrophobia*" was in greater vogue than at present, I knew several surgeons who were *temporarily* affected by it, till they lost the eyes of patients from iritic inflammation, which they had never done before, when they used mercury. They bitterly regretted having forsaken a plan which they had previously found so generally successful, to adopt another from the false assurances of its *invariable* success. Dr. Robertson thinks that mercury can

scarcely be praised too highly in this disease, which, when allowed to proceed, more especially after lymph has been effused, too frequently ends in the loss of the finest sense we possess. When once the pupil has been obliterated by the effused lymph, and time has been allowed to glide on, it is next too impossible to restore sight by any remedies we possess, for it becomes so completely organized, that even mercury loses its influence over it. The only resource that remains for the patient is the formation of an artificial pupil, at all times a difficult operation, and in such cases exceedingly apt to be unsuccessful from the recurrence of inflammation of the iris. Indeed no attempt should be made to form an artificial pupil as long as the slightest susceptibility to inflammation exists; perhaps it ought never to be performed till one or two years after the occurrence of the iritis. In some constitutions, Dr. Robertson assures me he has derived great benefit from the use of colchicum, particularly in gouty and rheumatic habits, in which iritis is by no means unfrequent; so great indeed has been his success with this remedy, that he generally tries its effects before having recourse to the mineral. It is only, however, where the disease has not proceeded far, that he has been thus successful with this medicine. When lymph has been effused, we have no resource but mercury. He has tried iodine in such cases, and he thinks with some benefit, but they are not sufficiently numerous and precise, to allow him to give a decided opinion with regard to its utility. He would, however, *recommend its employment, together with that of the colchicum, to those who can see nothing but poisonous qualities in mercury.*

The extract of belladonna is to be rubbed over the eye-brow and forehead or on the temple or cheek, early in the disease; or a strong solution of it may be inserted between the eye-lids every second or third hour. If no effusion have taken place, the pupil will be regularly and considerably dilated in the course of a short time; but if adhesions exist between the iris and other parts, the dilatation will, of course, be only partial. It is often necessary, when lymph has been effused, to continue the belladonna for some length of time after other remedies have been discontinued, in order the better to secure the natural functions of the iris. When the inflammation is severe, scarcely any dilatation is occasioned by the belladonna; its use will, however, prevent the pupil becoming still more contracted; but as the inflammation subsides, the advantage resulting from its application becomes more apparent. Some say, that as soon as the dilatation of the pupil is produced, the pain and other symptoms disappear, from which they infer that belladonna is a powerful remedy in destroying the inflammation; but this is not the case, the dilatation merely indicates the cessation or diminution of the inflammation, towards which it does not contribute. The extract of hyosciamus seems to possess the same qualities as that of belladonna; so that, should the one lose its powers, the other may be substituted.



## AMAUROSIS.

THE term amaurosis, as at present used, is employed to denote a partial or total loss of vision affecting one or both eyes, arising from various causes which destroy the functions or structure of the optic nerves and retina. The symptoms of amaurosis are so very various, depending upon the cause of the affection, that it is impossible to give a good general description of the progress and termination of the disease in this work, from want of space. I shall therefore be obliged to deviate from the general plan, and commence the subject by describing the causes, as far as they are known, upon which amaurosis depends.

*Causes of amaurosis.*—1. Amaurosis may be produced by inflammation of the retina, which is fortunately a rare disease, as the severity of the symptoms occasions great suffering to the patient, and is frequently followed by loss of vision. The inflammatory action may be acute or chronic, a primary or a secondary disease; generally it is a secondary disease, the inflammation spreading from the choroid coat. 2. It may be produced by congestion of the vessels of the retina. 3. By congestion of the vessels of the brain, as in apoplexy. 4. By destruction of those parts of the cerebral mass, upon the healthy state of which vision depends, blindness being well known to be the consequence of many affections of the brain,—as of inflammation with extensive effusion into the ventricles,—inflammation of the substance of the brain,—effusions at the base of the brain,—and tumours pressing on the parts on which vision depends; blows also, on the supra-orbital region, have been known to produce the disease. 5. Narcotics, and the abuse of ardent spirits, are so well known as the causes of temporary loss of vision, that they need not be mentioned. 6. Amaurosis has been known to be occasioned by gastro-intestinal irritation, produced by worms,—by indigestible matters,—and by particular articles of food. During the time of Buonaparte's political influence on the continent, he prohibited the importation of our colonial produce, and we are told by Professor Beer, that amaurosis became more frequent than it had been formerly, owing to the substitution of a vegetable matter, called chicorée, for coffee. 7. Amaurosis is sometimes vicarious, with cutaneous affections, and with discharges of various kinds. 8. Some cases are on record, where it took place during pregnancy. 9. It is also said to occur during dentition, whether in consequence of determination of blood to the head, or of disordered state of the stomach and bowels, does not appear.

*Symptoms of amaurosis.*—It will be seen from the preceding statement of the various causes of amaurosis, that it is impossible to devote a sufficient number of pages in this work to a minute description of a disease, the symptoms of which must be so very various, occurring under such different circumstances. I may mention, however, that imperfect vision, pain in the eye-ball and in the head, flashes of light and illuminated sparks, dark spots, or other optical illusions, appearing before the eye, accompanied with a preternatural state of the pupil, which is generally dilated and immoveable, announce the



existence of this disease. But this state of the pupil is not always present, and when present does not, exclusively considered, justify the inference that the eye is amaurotic, such states being also produced by the condition of the iris itself and the ciliary nerves, independently of disease of the retina. An irregular, dilated, and commonly immoveable pupil, together with the loss of its jet black colour, and a tremulous motion of the diseased eye, are the more common appearances of amaurosis. Sometimes amaurosis comes on suddenly; at others gradually and partially, the patient recovering vision entirely, and losing it again and again, till at last it becomes permanently destroyed. Squinting with the diseased eye takes place in amaurosis, but it is not in general permanent; it is only remarked for a short time, after a person looks at another object, it being some time before the muscles of the diseased eye are able to place it in the same direction as the other.

*Treatment of amaurosis.*—The remedial agents must vary according to the cause of the disease. It is quite evident that, in the first three causes enumerated, viz.—inflammation of the retina, congestion of the vessels of the retina, and congestion of the vessels of the brain, depletion by opening a vein, and applying leeches or cupping glasses, more or less actively pursued, must be had recourse to; the chief circumstance of consequence is promptness. In the fourth case, viz. disease of the cerebral parts on which vision depends, as concussion, inflammation, and tumours, I have to remark, that in the two former states of the brain, the treatment necessary for the removal of such disease must be had recourse to, but in the latter no treatment can have any effect. In the cases produced by narcotics and intoxicating liquors, the amaurosis is only temporary; if the patient recover from their effects, the sight for the most part is restored. In cases depending upon gastro-intestinal irritation, the offending cause must be removed, and the bowels subsequently attended to. Should the disease be connected with cutaneous affections, and with discharges, bleeding may produce relief, but it will only be temporary; the chief dependence must be placed, either on restoring the cutaneous disease—or the discharge, or using means to enable the constitution to do without them, viz. by the occasional application of leeches, but especially free purging, and a dry unstimulating diet. Occurring during pregnancy, it will in all probability vanish, like many other unpleasant symptoms, after delivery; but minute investigation should be made, in case the amaurosis should depend upon some of the other causes, when suitable remedies are to be used. If the disease should ever take place during dentition, leeching and purging will be necessary; but lancing the gum will be found to be the most certain remedy.

Nux vomica has been long known to possess considerable powers in paralysis, and since its active principle strychnia has been discovered, it has been found of more service in the same set of affections. Strychnia has been lately tried in France in amaurosis by Lember, and in some cases with marked benefit. It is evident, however, that as a cure is not to be looked for in paralysis of a limb if its structure be destroyed, or the brain and spinal marrow

or principal nerves be diseased past recovery; so neither can we expect to cure amaurosis by strychnia, or any other remedy, if the structure of the eye be destroyed, or if any organic lesions exist in those parts of the brain, which are known to be connected with vision. But I have no doubt strychnia will be found serviceable in amaurosis depending upon different functional derangements. It has been lately introduced into this country, and has been used in the royal infirmary of Edingburgh by Dr. Shortt and Mr. Linston. The manner of employing it is to sprinkle a quarter of a grain daily upon a newly blistered surface on the temple, increasing the quantity gradually till some manifest effect is produced. The blister requires to be renewed every third or fourth day; a little smarting is felt on the application of the strychnia, and it has produced erysipelatous inflammation of the part. The constitutional symptoms occasioned by the strychnia, are head-ache, agitation, and tremors of the whole body; sometimes shooting pains in the eyes, and occasionally cramps and convulsions have followed. When any unpleasant symptom takes place, the dose is to be lessened or intermitted. It is stated that the best antidote is the application of the acetate of morphia to the blistered part, or the internal use of opium. The reputation of the remedy is likely to be very much injured by the indiscriminate and empirical use which may be made of it.

The experiment has been tried by Dr. Shortt, and with complete success in three cases; but out of five cases treated by Mr. Guthrie in the Westminster Ophthalmic Infirmary, in one instance only was evident and considerable benefit observed.

I have lately had occasion to try strychnia in a case of amaurosis in a young gentleman. The disease succeeded a severe blow on the left temple; considerable inflammation of the corresponding eye followed, and vision was destroyed. The organization of the affected eye looked perfect when he fell under my care; the pupil contracted on the application of light; and he could always perceive the difference between night and day. Daily for a week, a quarter of a grain of strychnia was applied upon a recently blistered surface on the temple. No effects were produced except preventing strabismus. During four days, half a grain was used daily. One day half a grain was applied twice; a pricking sensation was felt in the hands and feet: on this occasion, during sleep, he was observed to be affected with slight spasmodic twitches and general startings. For two days after this, half a grain was applied daily, and on the third a whole grain was used, without any benefit.

## CHAP. IV.

### DISEASES OF THE EAR.

---

IN this chapter I shall treat, and that shortly, of Otitis and Otorrhœa.

#### OTITIS.

The symptoms of this affection may be considered under three heads, viz. 1. Common ear-ache; 2. Inflammation and suppuration external to the tympanum; and, 3. Inflammation and suppuration of the internal ear, which are sometimes connected with caries of the petrous portion of the temporal bone, the disease spreading even into the brain

1. *Ear-ache.*—This affection most frequently occurs during infancy and childhood; but adults are by no means exempt from it. It is a very painful, but not a dangerous disease, and is often ushered in with threatening symptoms, such as violent head-ache, fits of screaming, flushed face, quick pulse, great restlessness, and sometimes delirium.

2. *Inflammation and suppuration external to the tympanum.*—This disease is generally accompanied by more severe symptoms, and unless the inflammation be immediately checked, is of longer duration. It generally commences with rigors, followed by smart fever, flushing of the face, headache, severe paroxysms of pain darting through the ear, and occasionally some degree of delirium; the ear is tender to the touch, and sometimes pressure cannot be borne. On examination, the inner membrane is found to be swollen, and of a red colour; and in consequence of the swelling, and inflammation, more or less deafness is produced, with an occasional hissing sound.

3. *Inflammation of the internal ear.*—The symptoms, both local and constitutional, are generally although certainly not always, more severe; and it is more important to subdue the inflammation in an early stage. If allowed to go on unmolested, the disease advances rapidly or slowly, according as the inflammatory action is acute or chronic, partial or extensive; the tympanum becomes ulcerated and destroyed, together with the lining membrane of the different parts of the internal ear; the small bones are detached and discharged, and the hearing, on the side affected, becomes irreparably lost. When the bone is affected, the matter has a corresponding appearance and odour; and as the disease advances in the bone, chronic inflammation of the membrane of the brain succeeds, subsequently affecting the brain itself; so that on

dissection the bone is found to be carious, with serous or purulent effusion, and extensive softening of the base of the brain. In some instances, the disease is very insidious in all its stages, attended with very little pain, and perhaps no discharge from the ear, till at last violent pain suddenly takes place, speedily followed by delirium and coma. In other instances in which the attack is very acute, the painful symptoms cease, and coma gradually steals on; so that the patient may be supposed to be recovering and enjoying sleep, when in fact he is in the very jaws of death. Sometimes spasmodic symptoms, and even convulsions, precede death. All modern writers on the brain notice such cases; and several interesting examples are to be found in Dr. Abercrombie's work on the brain, as well as in that of M. Itard, entitled "*Traité des Maladies de l'Oreille.*"

*Causes.*—All these varieties often take place in the course of ulcerated sore throats, as also during the progress of the exanthematous diseases, where there is for the most part an affection of the throat. The three varieties may also be produced by cold, particularly when applied to the part. Thus I have seen some severe cases, from the ear having been exposed to a small current of air; but a more common cause proceeds from the bad trick which children have of putting pieces of paper, peas, &c. into the external ear. Another frequent cause of the two first varieties, and perhaps occasionally of the third, is the pernicious and disagreeable habit of picking the ears, by means of various well known contrivances. These complaints sometimes arise from a cutaneous inflammation, generally of an erysipelatous character, which extends into the ear. A collection of indurated wax in the ear, producing irritation and inflammation of the part, the larvæ of insects, and even insects themselves, sometimes produce serious inconvenience and pain.

*Treatment.*—The treatment of ear-ache is well understood in the nursery; medical men are therefore seldom consulted, unless in severe and obstinate cases, to which the following observations will apply. If the pain and other symptoms be not very severe, and should the inflammation of the inner membrane be slight, fomentations assiduously applied during the day, and a soft light poultice during the night, together with the use of a small quantity of laudanum mingled with oil dropped into the ear, will generally suffice. When the symptoms are severe, and the pain excruciating, I have seen the greatest benefit produced by opening a vein in the arm; but I have only thought it necessary to try this in cases where the symptoms were violent, and the disease of frequent recurrence, and in none of these instances has it ever returned. Besides fomentations, the application of leeches is serviceable, to be repeated according to circumstances, and followed by a blister behind the ear if necessary. It is also found advantageous, before dropping in laudanum and oil, to use an injection of milk and water, which will assist in softening and removing indurated wax, if any be collected. It is almost unnecessary to mention, that the regimen should be moderately, if not entirely antiphlogistic; and in severe cases, a brisk action is to be kept up on the bowels; I have



seen good effects from the use of antimony, particularly in cases complicated with rheumatism, or produced by exposure to cold.

As soon as an abscess is observed, it should be opened ; if not opened early, or if it be situated too deep, considerable additional suffering may be expected from the slowness with which the matter will form and escape, owing to its being situated in a hard and unyielding structure. If allowed to take its own course, a troublesome fungous ulceration sometimes follows, and a copious discharge of matter, which occasionally continues for years.

*Otorrhæa*.—A discharge of offensive matter from the ear is at all times very unpleasant, more particularly so when it is habitual and in large quantity.— Sometimes the discharge consists of an increased quantity of the natural secretion in a very fluid state ; at other times, it is more or less mixed with pus. It may be the consequence of increased activity in the secreting vessels, but more frequently depends upon chronic inflammation of the lining membrane of the ear, and occasionally upon deep-seated inflammation, and caries of the bones.

In treating cases of this description, attention should be paid to the above mentioned circumstances ; and it should be also remembered, that after a discharge has existed for some time, it becomes, as it were, necessary to the constitution, and cannot be checked without creating some tumult in the system, which may terminate very unpleasantly. Therefore, certain preparatory measures should be taken before the suppression of the discharge is attempted. Perhaps the best method of doing this, is to apply repeated blisters behind the ear, to keep the bowels open by gentle laxative medicines, to use a light and a dry diet, avoiding slops, and a greater quantity of liquid than is sufficient to prevent thirst. After this system has been pursued for some time, then we may apply injections of an astringent nature ; and, if necessary, exhibit acetate of lead internally. In some instances, it may be well to keep a small blister open or to apply tartar-emetic ointment to some other part of the body, to produce an external irritation. Should headache take place, or a tendency to lethargy, a few leeches ought to be applied behind the ear, or cupping glasses to the neck, followed by a blister, together with smart purgatives. In some instances in which it might be unsafe to interfere with the discharge, the disagreeable fetor may be very much diminished, by injecting a solution of the chloruret of lime or soda, properly diluted.

## PART VII.

---

DISEASES OF THE SKIN.



# CHAP. I.

## GENERAL REMARKS ON DISEASES OF THE SKIN.

---

THE importance of a knowledge of this class of diseases is so great in a practical point of view, that I shall devote as large a space to their consideration as is consistent with the plan of this work. The study is important, from the frequency of their occurrence, from the little which is yet known respecting them, and from the connexion, nay, I might have almost said the dependence, of cutaneous diseases upon the state of internal organs.

These diseases have, for many years past, excited great attention; and the late Dr. Willan has undoubtedly the credit of being the first to lead the way in the investigations which have taken place. On the Continent, Alibert and Rayer have followed his footsteps; but it is to be regretted that Alibert should have concealed that the spring which first set his mind in motion on this subject, was the knowledge of what had been previously done by Willan!

Willan's great merit consists, not only of drawing the attention of medical men to a subject which was quite neglected, but in classifying the different diseases, and in examining the writings of the most ancient medical authorities. It is incumbent, however, upon me to state, that the errors of his system are numerous, from carrying his divisions and subdivisions too far, and increasing the number of names, thereby complicating the study without simplifying the practice. Practical physicians will, I feel persuaded, agree with me in this statement, and their opinion is of more value than that of scientific book-worms. Our sole object in classifying and investigating diseases, is to render the treatment more successful and certain, which a too minute division decidedly counteracts. The practitioners who, according to my observation, are notoriously the most unsuccessful in the treatment of cutaneous affections, are those who, instead of taking a comprehensive view of the history of the case, and attending to the state of the digestive and other organs, embarrass themselves by making minute distinctions, and by endeavouring to force every disease into some of Willan's classes and orders.

Small-pox, measles, and other exanthemata, are included in almost all the popular works on cutaneous affections, and classed along with other diseases with which they have no connexion; as, for example, with purpura. I



have already treated of the exanthemata, in this work, as fevers attended with eruptions;—my pathological opinions respecting these and simple cutaneous diseases, are in some respects very similar.

In almost every instance of cutaneous affection which has fallen under my observation, whether it has been attended by fever or not, I find ample evidence in the history of the case, of functional derangement of some internal viscus; in some, the stomach and bowels are at fault, as in urticaria, erythema fugax, many cases of lepra, &c. while others are evidently connected with disease of the liver, mucous membrane of the lungs, &c. Erysipelatous inflammation is always the consequence of some internal disease, either functional or structural, sometimes of the stomach and bowels, at others of the lungs, and occasionally of the brain. This will be shewn when treating more particularly of erysipelas, which I have placed in this part of the work, and not among the exanthemata, because I do not consider it as a specific disease, having, like small-pox and measles, a definite course, progress, and termination.

The principles which I shall now attempt to explain respecting cutaneous affections, are those which experience and observation have, from an early period of life, forced upon me, and which I have taught ever since I began to lecture, in the year 1823.\*

Practitioners pay little attention in general to the seat of the cutaneous disease, and they have either very complicated notions, or never think at all of the nature of the affection. It may be shortly mentioned, in this place, that its nature is generally inflammatory; but that its seat is various, sometimes affecting the superficial vessels of the cutis which secrete the cuticle, as in recent cases of some of the squamous diseases; while at others, the sebaceous follicles are the seat of the inflammation, it being frequently produced by the mechanical irritation of the sebaceous matter which collects in too large a quantity, so as to over-distend the follicle and irritate its vessels,—as in acne, papulæ, &c.—whereas in a third class of cutaneous affections, as erysipelas, small-pox, &c. it is situated in the substance of the *cutis vera* itself, the inflammation and suppuration extending to the sub-cutaneous cellular membrane, and in some instances even deeper still, affecting the muscles and other tissues, as in bad cases of erysipelas and carbuncle. I shall avoid speaking of the *rete mucosum*, because its existence, even in the negro, has been denied by good anatomists, as well as of a minute glandular distribution, which some think they have seen by the help of the microscope, between the *cutis* and *rete mucosum*. Microscopic observations, like those performed by Mr. Chevalier, who describes the existence of these glands, are always liable to fallacy, and it is well to remind those who have much faith in them, of the dilemma in which the late Dr. Monro (usually called *secundus*) was placed, by an optical delusion, in the course of a very extensive set of experiments which he

\* It gives me great pleasure to notice the work on the diseases of the skin by Mr. Plumbe of London, and to recommend to my readers as the best pathological and practical treatise on this class of diseases, which is to be found in any language.

performed. He observed that all animal fibres were serpentine; he next proceeded with vegetable substances, and he also found that their fibres were serpentine. Astonished at these observations, he next proceeded to examine mineral substances, and he was astounded by observing, that whatever substance he examined, it was composed of serpentine fibres. He either wrote, or was engaged in writing, a paper upon the subject, when he discovered, through a scientific friend, that the serpentine fibres were all produced by a slight defect in the glass of the microscope, which saved him further trouble at the time, as well as subsequent embarrassment and chagrin. It is to be feared that considerable errors have crept into medicine from the incorrect impressions conveyed by microscope apparatus.

Some writers have described *papillæ* over the whole surface of the body situated in the true skin, but I am inclined to agree with Mr. Plumbe, who states that he has never been able to discover any vestige of them; and if they do not exist, the diseases ascribed to this tissue should be erased from medical writings. Mr. Plumbe has used a very strong argument against the existence of the diseases which have been ascribed to the *papillæ* of the skin: "Every genus of this order (*papulæ*) makes its appearance on all parts of the body at times, *except* where *papillæ* are really and easily found." (p. 7.)

The skin performs several important functions:—1. The formation and repair of the cuticle, which is insensible like the nails, and forms an outer covering to the whole surface of the body. 2. The skin performs the office of separating a large quantity of a limpid fluid from the blood, which escapes from the body by what is called insensible perspiration; and the proper performance of this duty must have very considerable influence upon the action of every other organ in the body. 3. It would appear that we are able to introduce many substances in the body by the process of absorption from the skin; so much so, that even minute quantities of strychnia applied to a blistered surface have frequently produced violent constitutional effects.

In this work I shall treat of cutaneous affections in the following order, without splitting the orders into so many different genera and species, as is usually done.

1. Erysipelas, or Rose.
2. Papular Diseases.
3. Pustular do.
4. Squamous do.
5. Vesicular do.
6. Purpura.

## CHAP. II.

### ERYSIPELAS.

---

ERYSIPELAS appears to have been noticed by the earliest writers on medicine, who frequently, however, confounded it with other diseases under the general term of *ignis sacer*.

This disease has been divided into several varieties, viz. idiopathic and symptomatic—erythematic—phlegmonous—erratic—bilious—local—malignant and putrid; and some of these have been again subdivided.

All unnecessary divisions of diseases, as I have already observed, are useless in theory, and injurious in practice. Mankind differ as much in constitution as they do in expression of countenance; and it is well known, that peculiarity of constitution gives rise to shades of difference in symptoms and appearances, which defy the ingenuity of the ablest nosologists; but they nevertheless have exerted themselves in a wonderful manner to accomplish the task, retarding instead of advancing the study of true pathology. If all the time and talent which have been misused in devising nosological arrangements had been employed in discovering the nature and seats of diseases, our knowledge of pathology and of remedial agents would have been much further advanced than is at present.

I shall treat of all forms of the disease, under the simple term of erysipelas, while I shall take care to notice the peculiar, as well as the occasional symptoms, appearances, and terminations which may seem to indicate corresponding alterations in the treatment. I am induced to follow this plan here, because it has met with the approbation of practical men of considerable standing in the profession, who have done me the honor to attend my lectures.

*Phænomena of erysipelas.*—This disease takes place in people of all ages. I have seen it in new-born infants, as well as in extreme old age. It more particularly occurs in certain constitutions,—viz. in those who are liable to affections of the skin, to gout, and who are subject to disorder of the stomach and bowels. It is a disease which is met with in practice in every degree of severity, appearing under the form of the slightest erythematic blush confined to one spot, or under that of deep and intense inflammation of the skin, extending over the whole body. The inflammation may be severe, affecting not only the skin and sub-cutaneous cellular tissue, but also involving the muscles, and terminating in extensive suppuration, ulceration, and mortifica-

tion. In some cases the disease spreads from the skin to deep-seated parts, while in others the inflammation extends from within outwards, sometimes from the periosteum, when it is primarily inflamed, but more frequently from the tendinous aponeuroses forming the strong fasciæ which bind down the muscles. In such circumstances, the general phenomena of the disease and the local appearances differ considerably from those of simple erysipelatous inflammation. When the periosteum is primarily affected, severe gnawing pain, sleepless nights, &c. will be complained of for months, perhaps for years before the skin partakes of the inflammation. When the fasciæ of muscles become inflamed, whether from a puncture or from the application of cold, deep-seated pain, tumefaction, tenderness to the touch, and severe constitutional symptoms, precede the redness of the skin. In contradistinction to erysipelas, these cases have been named by Dupuytren, and others, *erysipiloid diseases*, and appertain more to surgery than physic.

The first local symptoms of erysipelatous inflammation are a tingling or pricking pain, with some degree of heat, swelling, tension and redness of the part. Soon a pungent burning pain is experienced, aggravated by motion or pressure; the swelling increases rapidly; the surface presents a shining appearance; on pressure, the redness disappears for a moment, but it immediately returns; and, as the disease advances, the part assumes a purple colour.

The constitutional disturbance manifests itself in the shape of febrile symptoms and general functional disorder, varying according to a number of circumstances, preceding the attack of erysipelas,—such as the extent and severity of the disease, as well as its duration and situation. If the disease have come on after a long and debilitating illness, the symptoms will be different from those produced in a person who had been previously in a good state of health. If the inflammation be superficial, the symptoms will be comparatively slight; if it be situated on the head and face, delirium and even coma may occur, which in all probability would not have happened if the disease had attacked an extremity, and were limited to the same extent of surface.

The external characters of the disease vary much according to situation, severity, and duration;—affecting the head and face, the features swell much, as in small pox; the conjunctiva of the eye partakes of the inflammation, as well as the mucous membrane lining the nose, mouth, and ears; vesication takes place, even in slight cases, or the parts become exceedingly hard, more particularly the ears; and if the inflammation be superficial, desquamation of the cuticle, after diminution of the redness and pain, marks the decline of the disease. In cases where the inflammation has been more intense and deeper-seated, a doughiness or boggyiness is left, which renders it probable that matter is effused. On some occasions, distinct fluctuation leaves no doubt of the existence of matter, which may be either circumscribed, as in phlegmonous erysipelas, or diffused, as in the diffuse inflammation of the



cellular tissue that occurs in patients who are of a bad habit of body, and which arises sometimes from a prick in dissection.

The circumstances preceding an attack are also very various; erysipelas frequently comes on at the termination of fevers of long duration, as well as of inflammations of different organs, more particularly of the brain, lungs, and peritoneum; it also takes in individuals who have laboured for years under different chronic diseases, medical or surgical. Those who have long indulged in the abuse of strong potations, as well as gourmands, are also liable to it. At other times it appears to be the immediate effect of cold operating on the general system, or of some indigestible matter in the stomach and bowels. Under whatever circumstances erysipelas may take place, the attack is generally preceded by rigors or chilliness, alternating with flushes of heat, oppression at the præcordia, difficulty of breathing, cough; expectoration, pain in the back and loins, general uneasiness, delirium, a sense of weight in the head, head-ache, lethargy, and sometimes a state bordering upon coma, with high or low toned febrile symptoms. These phenomena may exist with more or less severity for one day, or for twenty days before the inflammation appears in the skin; there are no regular periods, as in measles, scarlatina, and small pox. Erysipelatous inflammation sometimes appears on a part for a few hours, and suddenly vanishes, shewing itself perhaps in another situation; or if it does not shew itself again on the surface, the constitutional symptoms become aggravated, coma, or dispnœa frequently follows, and sometimes even death itself.

*Causes of erysipelas.*—From the prevalence of erysipelas in particular years, a belief is pretty generally entertained of its being contagious, which has been much strengthened by the additional fact of the occurrence of a considerable number of cases at one time in particular hospitals. There is much stronger ground for believing that erysipelas is produced by epidemical influence. But the occurrence of the disease can, in the majority of cases, be much better accounted for by sudden changes of atmospheric temperature, along with considerable moisture, together with the state of the bowels, and indulgence in particular articles of food.

It is proper that I should here state, that I deny altogether the idiopathic nature of erysipelas, and that I believe it to be an occasional symptom of different diseases, which diseases may frequently occur, under atmospherical, epidemical, and contagious influences.

In a great majority of instances, if the particulars of the cases be enquired into, it will be found that no communication, direct or indirect, had taken place with others labouring under erysipelas. Sometimes it attacks nurses and others who have had an anxious attendance upon the sick, labouring under various diseases, as peritonitis, pneumonia, different kinds of fevers, fractured limbs, and injuries of the head. Some may have been attacked, no doubt, with erysipelas, when attending patients labouring under that disease. But such an event does not take place more frequently than during an

attendance on patients affected with other disease. I have seen a great number of cases of erysipelas, and have been greatly interested, from the earliest period of my professional life, in the investigation of its nature and seat; but have never met with a nurse or attendant who was attacked with erysipelas when attending a patient laboring under that disease, although the confined, crowded, and extremely filthy state of the apartments on very many occasions, seemed but too well calculated to contaminate the atmosphere, and thereby to promote the generation and communication of contagion. If erysipelas were as contagious as it is represented to be, we ought certainly to see erysipelas producing erysipelas in the same determinate manner that small pox and measles are known to produce these complaints; but I have never observed such a phenomenon.

That erysipelas sometimes appears to exist as an epidemic, cannot be denied, and on many such occasions it is said to spread by contagion in hospitals; but if it were an idiopathic disease, and contagious, it ought to spare none, or at least few who have an ulcer, or any abrasion of the skin. It ought to spread more or less slowly from one to another, so as at last to affect almost every one who approached within the sphere of the contagion. We find, however, that it only attacks individuals here and there, frequently at a distance from each other, who have been in separate wards, and who have never come once in contact. This is very different from what occurs in small-pox, measles, and a few other diseases which are known to be contagious, and which are always marked by symptoms peculiar to themselves. In these there is an eruptive fever, which continues for a certain number of days before the eruption appears. This goes through a regular course of advancement and recession, and all the other phenomena only vary in intensity. Each disease is recognized under every circumstance of age, sex, and constitution. Neither small-pox nor measles can be generated by any of what are called the common causes of diseases not contagious, such as exposure to cold, damp, and fatigue, affections of the mind, &c.

Erysipelas sometimes does not appear in the course of fevers, inflammations, and other morbid conditions of the system, till perhaps the end of the third or fourth week; at other times it occurs on the second or third day, and at all intervening periods. This is certainly very unlike the acute eruptive diseases which are known to be contagious; besides, erysipelas has no regular and determinate course as the others, which attack the same individual only once in a life-time, while erysipelas may affect a person twenty times. Let me ask if any one has succeeded in producing erysipelas in a healthy person by introducing matter taken from an erysipelatous surface? This has been stated, but I believe it to be a mere assertion; but even if this could be answered in the affirmative, it is no proof of the specific and contagious nature of erysipelas, because the same affection has followed scratches received during dissection. It has followed the application of leeches and blisters, as well as injuries pro-

duced by minute splinters of wood, and punctures made by perfectly clean sewing needles. In no point of view, then, can erysipelas be said to be a specific disease, or to resemble other diseases which are known to be contagious.

When erysipelatous epidemics have prevailed, I have always remarked that they have occurred either under sudden vicissitudes, of weather, attended by considerable moisture, or during the autumn after a hot summer, when there was a great abundance of fruit. Under the first circumstances, fevers, and acute and sub-acute inflammations, also prevail, particularly bronchitis. Under the last, the functions of the stomach and bowels suffer, irritation of their mucous membrane ensues; fevers and diarrhœas also prevail; and the erysipelas, in both cases, although a frequent occurrence, is a mere symptom.

The reasons why erysipelas should be occasionally very prevalent in hospitals, and be attended with greater fatality than in private practice, can be easily explained. In this country, from the pride of being independent, it is only the most destitute of the poor,—servants at a distance from their friends,—or country people, who desire a consultation of doctors,—who can be prevailed upon to go into an hospital. In hospitals patients are generally too much crowded together; there is great irregularity of temperature in the wards; and sufficient attention is not paid, except at the hour of visit, to ventilation.

These circumstances, and many others which could be adduced, enable us to account in a more satisfactory manner for the prevalence of erysipelas in hospitals, than by supposing, as too many have done, that the disease lies in ambush, embedded in the lime, mortar, and wood-work of the wards, watching favourable opportunities to seize on flesh and blood.

*Appearances on dissection in erysipelas.*—The part which had been the seat of the inflammation, will be found after death to have lost much, if not the whole of its redness, but not its swelling. Upon making an incision, a bloody serum will be found infiltrated into the cellular substance. The skin will be often seen thick and hard, in the same state it is observed to be when a person has died twenty-four hours after a blister had fully risen; or, if supuration have taken place, pus will be found infiltrated instead of serum, in some places distributed generally through the cellular tissue; in others, circumscribed little abscesses exist. In the most severe degree of phlegmonous erysipelas, the parts will be very tender, easily torn, and a large collection of fetid pus will be found, with more or less of the cellular tissue detached, and perhaps mortified, the disease even extending into the muscles. In the sub-cutaneous cellular inflammation, more extensive destruction will be discovered; small abscesses will be found, but pus and dark-coloured ichor will be seen generally and deeply diffused among the muscles, blood-vessels, &c.; partial mortification and sloughing will have taken place here and there; and in some dissections, the muscles will be seen tender, and altered in appearance, resembling, in many cases, the last stage of putrefaction. I have seen the blood-vessels also extensively diseased in the inner coats, and the lymphatics as well as veins containing a puriform fluid.



Besides the above appearances, of extensive disease in the membranes and substance of the brain, pleura, pericardium, and peritoneum have been seen. But of all the tissues in the body, the mucous membranes are most frequently in a state of inflammation, and in many instances the fatal termination has been distinctly traced to bronchitic inflammation.

Some years ago, I was requested to visit an infant three days old, who had shown symptoms of great suffering from the moment of its birth, which was attributed to colicky pains in the abdomen. On examining the abdomen the commencement of erysipelatous inflammation was discovered, which, by the following day, had extended nearly over the whole trunk and thighs. Soon afterwards it began to sink, and died in about forty-eight hours after the first appearance of the external inflammation. On dissection, the most extensive ravages of disease were discovered in the abdomen, the effects of peritoneal inflammation,—viz. considerable exudation, and the agglutination of the intestines to each other.

My friend and pupil Dr. Yates, when attending my dispensary, was requested to see a child one month old, on a Saturday evening. He found the abdomen tumefied and tense; there was an erysipelatous spot about the size of a half-crown on the inner part of the right thigh near the groin; the child appeared to him to be dangerously ill, but did not seem to be in much pain. Dr. Yates was informed that it had been taken ill on the preceeding Thursday morning, after having passed a bad night; that the bowels were confined; and that he cried violently at times, and gave evidence of the abdominal suffering. By the following afternoon the erysipelatous inflammation had extended over the whole abdomen, the child was in a moribund state, and died on the following morning.

*Dissection.*—The abdomen was considerably distended. The surface of the abdomen and thighs shewed the remains of the erysipelatous inflammation, and there were, besides, much tumefaction and discolouration of the integuments at the lower part of the chest. On opening the abdomen, the intestines, which were moderately distended with flatus, appeared very vascular, as well as the part of the peritoneum which lines the cavity. Flakes of coagulable lymph of a yellow colour were spread over the intestines, and interposed between their convolutions, in some places forming slight adhesions. On displacing the intestines, a large quantity of this matter mixed with serum was found, a layer of yellow-coloured lymph covered the whole of the anterior and inferior surface of the left lobe of the liver, which adhered not only to the parieties of the abdomen, but was also glued to the stomach. The liver, when cut into, presented a very dark appearance, and the gall bladder was nearly empty. The omentum was also covered with the above-mentioned exudation. The stomach distended with air, was found to adhere to the diaphragm as well as to the liver. The colon was much contracted, and on being split open, its mucous membrane was found very vascular, much elevated here and there, and coated with a dark, thick mucus.



The viscera of the pelvis were found slightly matted together by recent depositions of lymph. The ovaria were larger and softer than natural, and, with the uterus, were covered with coagulable lymph; the left broad ligament was attached to the peritoneum at the brim of the pelvis, by an interposed mass of lymph.

In the thorax, the pleura costalis was very vascular on both sides, and slight recent adhesions were observed with the pleura pulmonalis, by means of large masses of lymph precisely similar to those met with in the abdomen and pelvis.

The following case by Dr. Gartshore is extracted from the 2d volume of the Medical Communications. "The child of ——— Warwick, in June, 1773, was observed to be uneasy and hot, to vomit a yellow fluid frequently, and to have fewer stools than is usual for a child of that age. A gentle emetic was first given, after which manna was copiously poured down, and glysters frequently exhibited, notwithstanding which, his bowels were difficultly and scantily evacuated. Two days after, the abdomen was observed to be swelled, tense, painful to the touch, and had an inflamed appearance, which extended to the scrotum. Gentle aperients, glysters, fomentations, and the semi-cupium often repeated, were of no avail. He died on the twelfth day from his birth, and the fifth from the attack.

*Dissection.*—On opening the abdomen, we found the appearances very similar to what we had often observed in the true puerperal fever,—viz. a purulent exudation covering the surface of the peritoneum, and an adhesion of many of the viscera to this membrane and to one another from the diaphragm downward, with some extravasated fluid in the abdominal cavity. On laying open the scrotum, that also was swelled and inflamed, and we found purulent matter upon the surface of the epididymis and testis on each side; the testes themselves appearing inflamed. But though the chylopoietic and spermatic organs seemed to have undergone superficial inflammation, there was no appearance of any tendency to mortification."

Underwood, when noticing the appearances on dissection in the bodies of several children who had died of erysipelas, states that "the contents of the belly have frequently been found glued together, and their surface covered with inflammatory exudation, exactly similar to that found in women who have died of puerperal fever. In males, the tunicae vaginales have been sometimes filled with matter, which has evidently made its way from the cavity of the abdomen, and accounts for the appearances of the organs just now described; in females the labia pudendi, are affected in like manner, the pus having forced a passage through the abdominal rings." (*Diseases of Children*, vol. I. p. 36.)

Some years ago, I was asked to see a father and son labouring under erysipelas of the head and face, as pure examples of idiopathic erysipelas. In both cases I was able to satisfy the gentleman who had been previously attending, that there was a general affection of the mucous membranes,—that

of the lungs in one, announced by the dyspnœa, cough and wheezing,—and that of the stomach and bowels in the other, announced by thirst, very red tongue, tenderness and tumefaction of the abdomen. Both cases presented most unpromising appearances; proper remedies were applied; stimulants withdrawn; one recovered, but suffered during several years from the effects of chronic inflammation of the mucous membrane of the air-passages, and alimentary canal. On opening the body of the fatal case, traces of inflammation of the membranes of the brain were discovered, viz. vascularity and effusion; and on slicing the brain, it was found to contain a larger quantity of blood than usual. The pericardium was attached to the heart at every point. The mucous membrane of the trachea and bronchia was found dark coloured from vascularity, and the tubes were filled with tough exudation of a reddish colour.

The mucous membrane of the stomach was red, vascular and soft, easily separated, and covered with a thick tenacious exudation; this was also the condition of the mucous membrane of the intestines, particularly of the ileum, where the vascularity was much greater than in the stomach, and appearances were discovered, which I now know to have been the commencement of ulceration.

In the year 1823, I was requested to see a woman with erysipelas of the abdomen, which had commenced about a fortnight after abortion. The whole surface of the belly was affected, the inflammation was of a deep purple colour, with sloughing at the umbilicus. Although this woman possessed considerable property, she was living in a state of abject misery, neglected by a brutal, drunken husband, and had been long suffering in mind, as well as in body. A very imperfect account could be obtained, either of her previous or present symptoms. On the following day some of the mysteries of her case were removed by the separation of a slough at the umbilicus, and the discharge of a large quantity of urine. The woman soon sunk under her sufferings; and on dissection, the peritoneal surface of the fundus of the bladder was found strongly attached to the peritoneal lining of the abdomen corresponding to the umbilicus; the bladder appeared to have been enormously distended and neglected, till at last the urine found an exit by this process of nature.

The following abbreviated case of erysipelas is extracted from the pathological work of Tacheron. A man was seized on 1st Feb. 1808, with anorexy, nausea, head-ache, severe pain of neck, and difficult deglutition. These symptoms gradually increased for some days, the face becoming swollen, inflamed, and painful, with severe diarrhœa. He had cough and expectoration, which afterwards became bloody, and the patient died on the 19th. The following appearances were found on dissection: "In the head there was effusion of serum in considerable quantity (3iss.) in the ventricles, between the membranes on the surface of the hemispheres, and also at the base of the brain. In the thorax several old adhesions were found, between the surfaces of the

pleuræ on both sides. The middle lobe of the right lung was reddish, hard, and did not crepitate; in consistence it resembled liver, and adhered to the portion of the mediastinum next the heart. On cutting into this lobe, a thick greyish, puriform fluid oozed out; the rest of the lungs being healthy. The pericardium adhered in every part of the heart, but particularly on its right side, where it could not be separated without tearing its substance. The heart was not much larger than natural; there was a well marked ossification of one of the mitral valves, which appeared almost entirely detached. At the base of the aortic valves, there were also observed points of ossification, and cartilagization. In the abdomen the intestines were found distended with gas; but, as well as the stomach, were in other respects healthy. The liver was larger than natural, and had contracted preternatural adhesions with the diaphragm; the convex surface of its left lobe was covered with lardaceous substance, which entered the substance of this vicus to the depth of two or three lines. The gall bladder contained polyhedrous concretions of the size of onion seeds, and of a dark-green colour; the cystic and choledic ducts were also filled with these substances. The spleen was three times its ordinary size, and so tender and soft, that the slightest pressure reduced it into a pulp. The kidneys were more vascular than natural."

The following dissections of erysipelatous subjects, are extracted from Dr. Hastings' work on the Lungs:—

"Dissection of case 5th, (page 228.)—The mucous membrane lining the bronchia and air-cells, was found very much inflamed. The tubes were filled with frothy serum, which in some places was mixed with a substance very like pus. There were several small tubercles in the structure of the lungs, but none of them appeared inflamed. There were elongated adhesions between the pleura pulmonalis and costalis. Abdominal viscera healthy.

"Dissection of case 6th.—A considerable quantity of fibrin was found in the cavity of the abdomen. The intestines were generally glued together, and the peritoneum was highly vascular. When the thorax was opened, the lungs did not collapse. The pleura was not inflamed. The mucous membrane lining the trachea, bronchia, and air-cells, was highly vascular, and the tubes were filled with a bloody serum. The right auricle and ventricle contained more blood than natural."

*Pathological remarks respecting erysipelas.*—Doubts have been already stated as to the existence of idiopathic erysipelas, when it does not proceed from external injury; and I am inclined to believe, that when it does occur after external injury, it is even then, in most instances, only symptomatic of some internal affection, which may be a disorder of function, or one proceeding from structural lesion of some internal organ. Erysipelas appears to be an inflammation produced by one of those salutary efforts of the constitution, by which disease is sometimes removed or translated from one tissue to another. In this instance, from an internal organ, the functions of which are more immediately necessary to life, to the skin, which has a less important



part to act in the animal economy. In point of fact, erysipelas ought to be regarded very much in the light of a natural blister. But I shall now enumerate the points on which these opinions rest, and afterwards proceed to adduce the evidence.

1. The constitutional disturbance, which exists in all cases before the appearance of the erysipelatous inflammation of the skin, shews erysipelas to be merely an occasional symptom of some other diseased state of the system.

2. The mitigation of the internal disturbance which frequently follows the appearance of the cutaneous inflammation; and the reproduction of perhaps worse symptoms than had previously existed upon the sudden recession of the erysipelas.

3. The appearances on dissection

4. The relief afforded by treatment founded on these opinions.

1. In proof of the first point, that constitutional disturbance exists in all cases prior to the appearance of the cutaneous inflammation, it may be mentioned, that I have never yet seen a case of erysipelas, however slight, which was not preceded by constitutional symptoms. Renauldin, in his short but able article on erysipelas, in the "*Dictionnaire des Sciences Medicales*," in giving an account of the symptoms and march of the disease, says: "It is rare that idiopathic erysipelas manifests itself, without having been preceded by some phenomena which denote an approaching alteration of health. But these precursory signs, being common to many diseases, do not announce an erysipelatous eruption, more than another of the exanthemata, or some other fever. It is thus that a person feels wandering pains in the limbs, spontaneous lassitude, cold, shivering, agitation, anxieties, and is generally out of order; he soon complains of disgust at food, nausea, and inclination to vomit, violent headache, want of sleep;—a burning heat succeeds to the cold, and spreads over the whole body," &c.

In the previous page, in speaking of idiopathic erysipelas, he appears to entertain the same opinions that are here advocated, for in his division of erysipelas into different kinds, he states that the following division, which he has borrowed from Burserius, appears to him much more natural and useful than any other: "1. Idiopathic erysipelas, primitive or essential, that is to say, that which takes place spontaneously, without having been preceded by any other malady, and which is produced by an internal cause, (*et qui naît d'une cause interne.*) 2. Symptomatic or secondary erysipelas, which depends upon another affection, and goes through its course with it; as phlegmon, œdema, every kind of continued fever, and different internal affections, sometimes of an acute, sometimes of a chronic nature. 3. Accidental erysipelas, which is occasioned fortuitously by a manifest external cause, acting immediately upon the skin; as the scorching rays of the sun, a superficial scald, the application of cantharides, or any other acrid and irritating substance, injuries, &c."

Cullen has given the following history of the symptoms:—"Erysipelas of the face comes on with a cold shivering, and other symptoms of pyrexia.—



The hot stage of this is frequently attended with a confusion of head, and some degree of delirium; and almost always with drowsiness, or perhaps coma. The pulse is always frequent, and commonly full and hard. When these symptoms have continued for one, two, or at most three days, there appears on some part of the face a redness," &c. (Vol. I. p. 255.) Although Cullen specifies "erysipelas of the face," yet it is well known that this affection, attacking any other part of the body, is preceded by the same train of symptoms.

Sydenham, in his letter on the plague of 1665, and the following year, observes, "that erysipelas began much in the same manner as the plague, viz. with a shivering followed by a feverish heat; so that those who never had the disease before, think it is the plague, till it fixes itself in the leg, or some other part."

These paragraphs are purposely introduced, in order that I may not be suspected, by those who are yet inexperienced, of having dressed up a statement of the precursory symptoms to suit my own views.

Cutaneous inflammation, produced by a blister, or a scald, will most undoubtedly excite general irritation, and more or less fever. In this case we have ocular proof to guide us, but in erysipelas, we have the general commotion of the constitution first, which I have known to continue for 10, or 12, or 30 days before the erysipelas appeared.

Cullen himself does not seem to have been well satisfied with the prevailing doctrines respecting erysipelas. In describing the different species of this affection, at page 75, of his *Nosology*, after mentioning the erysipelas pestilens of Sydenham, he observes in a note: "This and the following species (erysipelas contagiosum) seem to be nothing but fevers with a symptomatic erythema;" and I find in the next page, that Cullen entertained doubts regarding the idiopathic nature of several other cutaneous affections. Treating of miliary fever, for instance, he says: "That it is never idiopathic, I dare not affirm, in opposition to the opinion of physicians from the middle of the 17th century to the present day, and contrary to the sentiments of some respectable modern physicians; but as I know that experience, in this case is often fallacious, and that physicians, for the most part, are but a herd of imitators, I am forced to remain doubtful."

No one can have been any length of time in practice, without having met with instances of erysipelas occurring in individuals whose constitutions were destroyed by long continued indulgence at table, and drunkenness,—in whose bodies there were abundant evidences of functional or structural disease of many important viscera: therefore it is unnecessary to quote cases in proof of this.

That the disease frequently occurs during the progress of severe internal disorders, the records of medicine fully prove; several cases in my own practice have been already mentioned, when describing the appearances found on dissection, and similar cases have been quoted from Gartshore and

Underwood. In addition to these facts it may be mentioned, that the late Dr. Gordon of Aberdeen, in his able work on Puerperal Peritonitis, published in 1795, states, (at page 75,) that "one of the most favorable symptoms is an erysipelas on the extremities, or abscesses on different parts of the body; for such are certain signs of a salutary crisis." And in a note, (at page 58) he observes: "This critical erysipelas most commonly fixed on the extremities, but in a few instances, on the external surface of the abdomen, which happened in a case of puerperal fever, which I attended in the year 1788. The case alluded to, is the wife of William Walker at Newbridge, whom I attended at the same time with Thomas M'Roberts' wife, whose history is given in case VI. In both cases, the crisis was by an erysipelas, which, in the latter, fixed on one of the upper extremities, and in the former, on the integuments of the abdomen."

Cullen in treating of phenomena, states, that "sometimes the disease disappears on the second or third day, while an erysipelas makes its appearance on some external part, and if this continue fixed, the pneumonic inflammation does not recur." (Vol. I. page 149.)

When treating of hepatitis, Cullen also observes, that "it would seem to be sometimes cured by an erysipelas appearing in some external part." (Vol. I. 171.)

From the repeated observation of such facts, I cannot avoid considering erysipelas in the light of a natural blister; and it is very probable that the ancients were first led to apply external irritants, and the actual cautery, from observing the beneficial effects of erysipelatous inflammation occurring under severe internal disease.

2. The second point of evidence on which these opinions are founded, is the mitigation of the internal disturbance which frequently follows the appearance of the cutaneous inflammation; and the reproduction of bad, nay perhaps of worse symptoms, than had previously existed, upon its sudden recession.

These facts I have so often witnessed, that I feel obliged to receive them as a part of the medical evidence of the case.

Sydenham's third reason for considering erysipelas to resemble the plague, is: "The expulsion of the malignant matter to the skin on the third or fourth day, with an abatement of the symptoms."

Hoffman, in treating of erysipelas, observes, that "it sometimes exhibits a manifest mark of health; other diseases, especially a convulsive asthma, and a convulsive colic, have been removed by an attack of erysipelas." In another passage he states: "But those who die of this disease, are carried off by a fever, which is mostly joined with a difficulty of breathing,—sometimes with a delirium,—sometimes with drowsiness, &c."—The same author again remarks, that "it is rendered very dangerous by improper treatment. I have seen erysipelas *strike in*, after taking a vomit, and a strong purgative, when an inflammation of the stomach, and death, have followed. Bleeding also has struck it in, and rendered it wander-

ing with much greater inconvenience. I have also observed, that after being repelled in the leg, by an application formed of camphor, red lead, and boll, it has been followed by a high fever, and intolerable pain of stomach, a great difficulty of breathing, bilious vomiting, loss of strength and appetite. These symptoms have not gone off, till the erysipelas had been invited back to its former seat by a blister, and anti-spasmodics, and mild sudorifics,—and I certainly know, ( continues Hoffman, ) that an erysipelas of the head, having been treated by repellent, cooling, binding, or too spirituous applications, and camphorated liniments, has brought on a vertigo, lethargic disorders, and quincy, delirium, and palsy of the tongue; which evils have frequently proved fatal to persons in years, and scorbutic habits.”

“A gentleman, ( says Dr. Swan, the accomplished translator of Sydenham’s works, ) who by the cold air, suddenly struck in the erysipelas of his face, had all the symptoms of an inflammation of the brain, and was in the most imminent danger, appeared to be snatched from death by bleeding in the jugular vein, and besides that, applying two large blisters to both sides of his neck, bleeding him in the arm, and giving him a strong purge, all which was done in the space of an hour.”

Mr. Abernethy notices a case of this kind in his lectures: “A stout healthy young man had an attack of erysipelas on his hand; he plunged it into cold water, and was soon seized with insensibility; he fell down in a state of torpor, and soon died.”

This gentleman is also represented to have said in his lectures: “I’ll be hanged if erysipelas is not always the result of a disordered state of the digestive organs. I never see it come on if the digestive organs be right, and it goes away as soon as they are put right. Now what is the medical practice? they powder the part a little, and they give bark, and so on!!”

“It has been observed ( says Wilson Philip, in his work on Simple and Eruptive Fevers, Vol. I. page 362, ) that if the typhus has commenced before the appearance of this eruption (erysipelas), the symptoms of *synocha* are often recalled by it. They are not only recalled but maintained, for the typhus, which supervenes towards the end of an erysipelatous fever, is less considerable, in proportion to the preceding symptoms, than in other varieties of *synochus*.” And at page 367, he observes: “Besides, the erysipelatous, like other eruptions which appear in continued fevers, has been known suddenly to recede; an alarming train of symptoms, of which debility is the characteristic symptom, supervene.” In another place, he also remarks: “This is also to be remembered, that when retrocession takes place, the patient is seldom out of danger till the eruption is recalled, which is done with greater difficulty the more he is debilitated.”

It may be said that the appearance of the erysipelatous inflammation does not *always* produce mitigation of the internal disease. The simple answer to be given to this objection is, neither does an artificial blister, applied for the express purpose of translating the diseased action to the surface, which I

maintain the erysipelas is intended by nature to effect. In severe inflammation of an internal organ, a blister, however large, has but little effect, if applied before the disease is very much subdued by depletion. In like manner, I may be allowed to say respecting erysipelas, that if the internal disease exist in a greater ratio than the cutaneous inflammation, then little or no constitutional relief can be expected.

At the period when the erysipelatous inflammation begins to decline, particularly under improper treatment, it is frequently observed that the functions of the brain or lungs, or perhaps both, appear to become suddenly and seriously affected, accompanied by oppression at the præcordia, and other alarming symptoms. In such circumstances, it is said, in ordinary medical language, that the disease has spread, or extended itself from the skin to internal organs; others speak of it as a translation or metastasis. Cullen denied the doctrine of translation, and was rather inclined to adopt the idea of the extension of the inflammation. Thus, when the erysipelas attacks the head, and when the brain becomes affected, it is said to be in consequence of the extension of the inflammation, by contiguity. I think there can be no doubt that a fair translation does occasionally take place in inflammatory complaints, particularly when connected with erysipelas; so much so, that we actually find a variety of erysipelas in books, termed "*erraticum*." In general, however, attentive observation has long convinced me, that in erysipelas, diseased action had existed in the internal organ before the external inflammation appeared, during what may be termed the eruptive fever, and that when the cutaneous inflammation occurred, acting the part of an effectual counter-irritant, it mitigated, but did not altogether remove the original disease. In erysipelas, the attention of the patient and also of the practitioner is attracted by the burning heat and pain of the external inflammation; but the internal disease becomes again apparent when the effect of the external inflammation subsides. Here again we cannot fail to discover additional proof of the analogy between a natural and an artificial blister.

Before quitting this part of the subject, a few remarks may be made regarding the mitigation of symptoms upon the appearance of the erysipelas, although it is repeating nearly the same observations which were made in the first of this work, when treating of the general pathology of eruptive fevers. The relief will not strike the eye of a symptomatical physician, we cannot see the *pathological* mitigation of symptoms, because the patient, who may have been previously lethargic or comatose, now complains most vehemently. Formerly there may have been little complaint, and little or no febrile movement; now, however, there are great anxiety, restlessness, pain, with febrile symptoms well developed, but upon minute examination of the particulars of a case of simple erysipelas, these will be found to depend principally, if not entirely, upon the external inflammation. Here again we observe the analogous effects of a common blister, which very frequently aggravates the patient's suffering, while it is mitigating the disease.



3. The third point on which these doctrines are founded, is the appearances found on dissection; and a triumphant appeal may be made to the dissections already recorded under the proper head, at page 522. I may here take an opportunity, however, of shortly stating the appearances found in the brain of a man affected with erysipelas. A respectable spirit-dealer was taken into the surgical hospital, affected with spontaneous erysipelas of the right arm; he had been several days ill. When Mr. Syme saw him, there was symptoms indicating violent inflammation of the brain. Immediately before my visit, the diseased part had been scarified, and twelve ounces of blood were abstracted. The inflammation on the fore-arm was severe, but above the elbow it was superficial, and did not extend quite to the axilla. He was continually talking, and could scarcely be restrained in bed, declaring he wanted to be up, for he had no complaint whatever; his eye was bright and lively; the expression of countenance displayed no signs of sinking; tongue parched and furred towards the root; pulse 98, and soft; considerable rigidity of the flexor muscles of the right arm. We were of opinion, that the man was in great and immediate danger; but more from the inflammatory action in the brain, than from the erysipelas. The head was ordered to be shaved and, cold applied. Before this was done, he became more furious, and continued so till within an hour of his death, during which short period he was comatose; the rigidity was observed to take place in both arms, and to increase till the time of his death. After great difficulty the friends agreed to allow the head to be examined, but the head only; and, as had been predicted, great vascularity was discovered in the membranes of the brain, but particularly at its base; the brain itself was generally soft, especially the middle lobes; and more particularly still, the *corpora striata*, and especially that on the left side, which was reduced to a state of complete ramollissement; the white substance of the brain was generally of a brownish hue,—an appearance which is known to be produced when its vessels contain much blood. A small cavity, containing a minute portion of blood, was found in the substance of the middle lobe on the left side.

4. I have now to bring forward a most important part of the evidence in proof of the views here advocated, viz. the relief afforded by proper practice.

*Treatment of erysipelas.*—It is truly lamentable to reflect how fatal erysipelas has always been, and continues to be, not only in public hospitals, but in private practice. It is not my intention, and certainly it is not my interest, to give offence to any one, but I cannot resist expressing an honest opinion, that much of this great fatality has been and still is the result of bad practice, founded upon erroneous pathological notions, or, perhaps, if one may be allowed to judge from the vacillating measures too often employed, upon no fixed notions whatever. When engaged in lecturing or in writing, I think myself bound in duty, as well as in honour, to adopt the maxim of Aristotle, when he said, "Plato is my friend, but truth much more." However highly a medical man may be respected, and whatever friendship may be felt towards

him, such circumstances will, I trust, never prevent me from expressing an opinion respecting any particular view or mode of practice which he may pursue, particularly when it is destructive to human life.

Many of my medical acquaintances are as much afraid of erysipelas as they would be of the plague; others, from the dread of typhoid symptoms, and of mortification and putridity, aggravated the disease by improper remedies.

The symptoms which are called typhoid, are often the consequence of the intensity and depth of the external inflammation, running into extensive destruction of parts, by diffuse suppuration and mortification. This cannot be denied, and when the case arrives at these stages, patients have but little chance of recovery under any plan of treatment; but the question comes to be: How are these bad consequences to be prevented in subsequent cases? The answer is easy, and the practice simple, provided medical men would use the common sense with which they are endowed, and glue up a prejudice that has been inculcated on their minds from the earliest period of their lives by forgetting that there is anything mysterious in erysipelas,—and learning to treat each case that comes before them upon its own individual merits.

Some take large quantities of blood indiscriminately from every patient, because they have seen the practice successful in one or two instances; others give the most powerful stimulants and tonics in every case, because they have seen that plan succeed in a few instances; a third set depend upon opiates, or some other *one* particular remedy; a fourth class will be found to draw blood, but not in sufficient quantity, or they repeat the operation in small quantities without mitigating the disease, while they do great harm by debilitating the patient; and in order to counteract this, they give stimulants too soon. Some timid practitioners will be found to do nothing, but to keep open the bowels, and sprinkle the diseased part with flour; and often have I had occasion to commiserate wretched patients, who, with dry, parched tongues, were doomed to swallow beef steaks,—as well as others, consumed by burning thirst, compelled to take wine, and even brandy. Some practitioners make incisions into erysipelatous parts under all circumstances, while others decry the practice, except when matter is formed, as in phlegmonous erysipelas.

Typhoid symptoms, besides being produced by mortification, and extensive destruction of the affected parts, are frequently occasioned by the continuance or concentration of acute or chronic diseased action in a vital organ, as seen in cases already recorded under the head "*Appearances on Dissection.*" The next question comes to be, after this information is obtained: How can these results of diseased action be prevented in subsequent cases? The answer is neither so easy, nor the practice so simple, as in the case of the external inflammation, where that alone has to be subdued; because it is now fully established that erysipelas occurs complicated, with a great many diseases of internal organs, and that inflammation of these (even of the brain itself,) may go on, and be beyond the reach of art without exciting such violent symp-

toms as to make the patient or his friends, nay, even some medical men aware, that his life is in the least danger. I cannot but agree with my late lamented friend Dr. Armstrong, when he stated that “pure surgery is like a vampire, whose daily food is human blood,” and deprecate the conduct of those pure surgeons who boast of enjoying immense wealth from medical, as well as surgical practice, and at the same time do not blush to confess their ignorance of what may be called medical pathology; nay, who even deery every part of the profession, but the practice of pure surgery. With regard to the great doctors of London, Mr. Abernethy used to tell his pupils what they do and say about erysipelas. “I will tell you (said he) what the *doctors* say about that; they say you had better not meddle with it at all. You may powder it a little if you please, but do not attempt to repel it, for if you do, you will have it affect some other part, perhaps some affection of a vital organ may take place. Now this is true enough, (continued he,) for if you try to drive it away, if you put on your cold washes, or play any of your surgical tricks, why, you have a metastasis at they call it, and the man dies!”

General bleeding was practised in erysipelas by Sydenham, and has since been followed by many practioners; but either they have not been able to support the practice by sound reasoning, or bleeding has been injudiciously employed, and has therefore frequently fallen into disrepute. Bateman says in his synopsis, page 131: “Blood-letting, which has been recommended as the principal remedy for the acute erysipelas, is seldom requisite; and unless there is considerable tendency to delirium or coma, cannot be repeated with advantage, at least in London and other large towns.” “Venæsection (says Mason Good) was formerly recommended, and has been so of late by a *few writers*, but upon mistaken principles. I can conceive few cases in which it can be serviceable, and the application of leeches always exasperate the efflorescence.”

I know no remedy so decidedly and immediately efficacious as general bleeding, if it be performed sufficiently early in the attack, and in constitutions not much debilitated by previous disease or bad habits: Whereas nothing but bad consequences can be expected to result from general bleeding in erysipelas, when the disease, having passed its first stage, is about to terminate in extensive suppuration, or in gangrene; or when it has taken place towards the termination of an acute or chronic inflammation of a vital organ, or at the termination of fevers. General bleeding may be attended also with bad consequences when employed under the following circumstances: 1. When the bleeding is not carried far enough to arrest the disease, at the same time that it destroys much strength. 2. When not followed up at a sufficiently short interval by a second general bleeding,—a local abstraction of blood,—or by purgatives, contra-stimulants, &c.

In the year 1824, I was requested to see a young man, residing near Leith Fort, who had part of the leg and the whole of the thigh affected with erysipelalous inflammation, the disease rapidly extending over the abdomen.



The part affected was very red, painful and tumefied. The constitutional symptoms were severe. The disease was attributed to his having knocked his knee against the edge of a grate; no contusion was to be perceived, but he stated, that for some time he had been unwell, feeling drowsy through the day, and restless at night, being often chilly, with want of appetite, and other symptoms of impaired health. He had been thus affected for perhaps ten days or a fortnight before the slight accident.

A vein was immediately opened, and about twenty ounces of blood abstracted, when a tendency to syncope took place, and the arm was tied up. Upon looking at the inflamed part immediately after the bleeding, no trace of redness could be observed, except in a circle of about two inches round the part on which the blow had been received. Dr. T. P. Lucas, now in the Royal Artillery, who was present at the time, cannot forget the impression this case made upon his mind. The treatment was followed up by antimony, laxatives, and the antiphlogistic regimen. A small abscess was opened in the course of two days after the bleeding, and the patient made a rapid recovery.

A hard-working woman, aged 70, frequently much exposed during laborious occupation as a water-carrier,\* was seized, in December 1823, with what she called a severe cold. Her voice was altered; she had a cough; severe headache, sickness, and oppression at the præcordia, together with constant chilliness. These symptoms existed for some days, attended by loss of appetite, and want of sleep; but she thought they would wear away. At length she felt heat and acute pain in the integuments of the upper part of the face and head; general swelling soon followed, severely affecting the ears, which were quite hard to the touch. Even those symptoms were allowed to continue for three days, before she applied to my dispensary for advice, when at length the symptoms became alarming, and the night previous to my seeing her she was delirious. I found her labouring under great headache, general oppression, and fever. The skin was hot and dry; tongue loaded; thirst; pulse quick, and hard; together with considerable prostration of strength. One of my pupils (Dr. Henry Lucas,) was requested to bleed her to the near approach of syncope; but not having succeeded in making a large orifice, and being perhaps rather afraid to take away much blood from a woman of her advanced age, he did not bleed her so as to make any impression upon the disease, or upon the constitution; but he came immediately to inform me of his proceedings. Another gentleman, who was further advanced in the profession, (Mr. Munro,) returned with Dr. Lucas, and bled the patient till syncope took place. The swelling and redness of the parts immediately disappeared; the thickening of the ear being only left, which also went off in the course of a day or two. The general oppression, fever, &c. were also immediately subdued—passage was obtained from her bowels before bed-time, when she got a large opiate, and passed a good night. A solution of tartrate of antimony was given to act as a contra-stimulant, but of this she only took

\* The last of her class—the old “*water carriers*” of Edinburgh.



two doses. In four days she was convalescent, walking about the house, made an excellent recovery, and still enjoys good health.

Several such cases could be quoted shewing similar results, even in some instances where fears were entertained that the disease had advanced too far, from the appearances of debility under which the patients laboured. I have never experienced bad effects from opening a vein; but care has always been taken to restrict the employment of this remedy according to the circumstances already noticed.

The application of leeches upon the inflamed part stands next in importance to general bleeding. Their number is to be regulated by the age and constitution of the patient, and also by the intensity, extent, and duration of the disease:—to an adult with ordinary strength, I would scarcely think of applying fewer than twelve or eighteen. This practice I have been in the habit of adopting ever since the year 1811, and with uniform success. But I apply them only when the disease is in its first stage, and, contrary to the predictions of many individuals, neither ulceration nor mortification have ever ensued. Medical gentlemen have seen the patients twenty-four hours after the application of leeches, when they could scarcely see the marks of the bites. Previously they did not believe that any, except bad consequences, could ensue from such practice.

The application of leeches possesses advantages over scarifications in the first stage of erysipelas, and before either hardness of the skin or suppuration has taken place. More blood can be evacuated by the leeches, unless the incisions be made very deep, and patients will be more easily persuaded to allow the application of the leeches, than to have scarifications made. But under the other circumstances already mentioned, viz. the hardness of the part, or the existence of matter, the knife is to be used in preference. Should suppuration have taken place beneath a fascia, the incisions ought to be extensive, in order to give it free vent; but I must mention that I have seen profuse hemorrhage on two occasions from punctures which could not be restrained. Both patients would, I believe, have died under any circumstances; but they began to sink immediately, and never recovered the loss of blood. In one of these patients, the part was carefully examined by the late Dr. Dease, Surgeon to the Forces, and Mr. Marshall, now Assistant Surgeon in the 87th Regiment, and I believe my learned and facetious friend, Surgeon Martindale of the 17th foot, with a view to discover if any large vessel had been wounded, but none could be found. Indeed we thought it would be so, and that the dark-coloured blood which flowed in a large stream from the wound, had been previously effused into the cellular tissue.

It is necessary to obtain free motions from the bowels, at first, by purgative medicines, and this may be subsequently effected by the use of antimony, which cannot be too highly extolled from the effects it produces as a contra-stimulant in this disease. It is a remedy which may be frequently trusted to exclusively in very slight cases of erysipelas, where there is no headache, delirium,

difficulty of breathing, or oppression at the præcordia, no pain on pressure in the abdomen, and no diarrhœa. The reader will therefore perceive that I neither think it necessary to bleed, nor to apply leeches, unless compelled by the constitutional symptoms, or the severe pain in the inflamed part. I may here mention, that in many cases which come under my notice, where an internal organ is suffering from diseased action, I trust to the leeches without having recourse to general bleeding, particularly when afraid that the disease may be too far advanced for the lancet.

Opiates are often of considerable benefit in erysipelas, although they have aggravated the external irritation in several instances in which they have been prescribed, and particularly in one case where the disease affected the whole body. The use of opiates appears to be most advantageous in cases which have passed into suppuration or mortification, but in which there is no tendency to coma. Some practitioners have great faith in emetics; but they seem to be serviceable in very recent cases only, where the disease depends upon some acrid or indigestible substance taken in the stomach; and by the speedy evacuation of which, the progress of the erysipelas will in many instances be checked.

Blisters applied to the part affected have, I understand, been much used in France, where they are highly extolled; but as I cannot speak from my own experience, I shall merely mention the practice.

With respect to tonics and stimulants, there can be no doubt of the great advantages occasionally derived from their employment in certain cases, where the disease is so far advanced before medical aid is obtained, that the strength and vital powers have begun to sink—where suppuration has taken place, and the matter has been evacuated—or where dead parts are undergoing the process of separation from the living.

The best local applications are warm fomentations in the first instance, and should the part shew a tendency to suppurate, light poultices may be applied alternately with fomentations. Cold astringent applications and evaporating lotions will sometimes be found to soothe the patient's sufferings, by removing the pungent heat for the time. I would recommend, however, that they should not be used until the bowels have been well opened, or till bleeding, and other antiphlogistic means have been employed. Speaking of cold applications, Renauldin (*Dic. des Sc. Med.* p. 266,) declares they ought to be entirely proscribed, and that he could cite many examples of their baneful effects; and he actually quotes such instances on the authority of Hagedorn, Hoffman, and Fabricius ab Aquapendente. In truth, it will be seen from the preceding statements, that erysipelas must be treated upon very different pathological principles from those stated in the *London Medical and Physical Journal*, by Mr. Earle, who considers erysipelas to be "*essentially an affection of the skin.*"

## CHAP. III.

### PAPULAR DISEASES.

---

UNDER this head I shall speak of the diseases which Willan has termed Strofulus, Lichen, and Prurigo, without splitting them into the same number of varieties.

Willan has divided Strofulus into five species, viz. *S. intertinctus*, *S. albidus*, *S. confertus*, *S. volaticus*, *S. candidus*; but I shall not treat of them separately, because they are not, even according to Bateman, "very important objects of medical practice."

With respect to the second class, Lichen, I shall speak of it also under one head, as Bateman himself admits, that "there is scarcely any limit to the varieties of these papular affections." Were I to follow Willan's classification, I should have to treat of *Lichen simplex*, *L. pilaris*, *L. circumscriptus*, *L. agrius*, *L. lividus*, *L. tropicus*, *L. Urticatus*.

As to the third class of this order, I shall describe only one variety, Prurigo, instead of four or five, as the same treatment is to be followed in all, whether it occur in youth or old age, upon the neck or *pudenda muliebris*.

By the term papular eruption, a number of small elevations under the cuticle is meant, generally having an inflamed base, sometimes, although seldom, containing a fluid, or suppurating, and commonly terminating in desquamation of the cuticle.

#### STROFULUS.

Strofulus is a papular affection of the skin, to which infants and children are liable, and in common language, is known by the term "gum;"—if it is reddish, it is called "the red gum," if whitish, "the white gum," and so on. It is a form of eruption depending either upon irritation in the *primæ viæ*, or upon teething, and is most commonly met with in those infants who are fed with the spoon too early.

*Treatment of Strofulus.*—I have always observed that those children thrive best, and have fewest complaints, who get least physic, and who are brought up at the breast; I would therefore strongly recommend, that in general, spoon-meat should not be given to children for the first three months, and physic as rarely as possible. Should this eruption appear, care must be taken not to expose the patient to cold or damp air, and ablutions with tepid water are

to be had recourse to twice a day. When the child is asleep, it should not be covered with too many bed-clothes; and should it appear during the period of dentition, the gums must be scarified occasionally. If fever take place, the usual remedies should be exhibited, and the diet regulated.

#### LICHEN.

THIS disease is to be regarded as *strophulus* occurring in adults. Dr. Willan has defined it, "an extensive eruption of *papulæ* affecting adults, connected with internal disorder, usually terminating in scurf; recurrent, not contagious." I have no doubt that the different varieties of lichen depend partly upon gastro-intestinal irritation, and partly upon determination of blood to the surface, as occurs during warm weather, and when the body is over heated, either by too much clothing or violent exercise. The great characteristic of the disease, is tingling or itching, aggravated upon going to bed; and the purest example of it is to be found in that variety which is called "prickly heat." It sometimes occurs in old age, when it is attributed to debility of constitution, which, I am convinced from experience, is not so frequently the cause as indigestible food.

*Treatment of lichen.*—Regular attention to the bowels, avoiding every acrid and indigestible kind of food, and violent exercise, together with the use of the tepid bath, and the local application of common vinegar, or the juice of limes, constitute the treatment.

#### PRURIGO.

THIS is a disease resembling lichen, excepting that the *papulæ* possess more of a chronic than an acute character, and that the itching is more violent and intolerable; indeed, I have considerable doubts whether it ought not to be considered as an aggravated form of lichen. The chief form under which we see the complaint, is in females in and about the *labia pudendi*; the desire to relieve the sensation by scratching is very difficult to suppress, and it is increased by exposure to heat, the action of walking, &c. It may be produced in this region of the body by the causes already mentioned when treating of lichen, as also *ascarides* in the rectum, and the acrid nature of discharges from the vagina.

*Treatment of prurigo.*—The general principles of treatment must be the same as those described under the last head, with the following additions, when it attacks the parts of generation,—viz. frequent ablutions, sometimes using astringent washes, and occasionally throwing them into the vagina; and if there be much irritation and swelling, the recumbent posture is very necessary. In such cases, particularly when the inflammation of the part runs high, I have seen the best effects from one general bleeding. If *ascarides* be suspected to exist in the rectum, *enemata* with turpentine should be employed. In extreme cases, when the parts are very tender, considerable benefit has been derived from the application of a solution of the nitrate of silver to the part, of the strength of six grains to the ounce. An alterative



course of mercury, either in the form of blue-pill, or that which goes under the denomination of Plumber's, is sometimes found of benefit, as is also the Harrogate water. A minute examination should be made to ascertain if any pediculi exist, which often create intolerable itching, and red papular elevations. The best method of destroying these is by applying a little calomel, mixed with hogs-lard, or the precipitate produced by throwing calomel into lime water.

## CHAP. IV.

### PUSTULAR DISEASES.

---

IN this class I shall treat of impetigo, porrigo, scabies, ecthyma, rupia, acne, and sycosis. The last two have been included by Willan in his seventh order Tubercula; and I have excluded one disease which he has comprehended in his order Pustulæ, viz. variola, because it ought to be classed among the fevers with eruptions, where I have placed it in the first of this work.

A pustule is known by an elevation of the cuticle, with an inflamed base, containing pus, which is formed sooner or later, if the disease be not cut short.

#### IMPETIGO.

IMPETIGO may be regarded as a pustular eruption, the pustules being small, irregularly circumscribed, with but a slight elevation of the cuticle, and terminating in scabs. It is produced and accompanied by active inflammation and considerable irritation of the parts affected, which terminate in a chronic action of the vessels engaged in the disease. In the first stage, the eruption is vesicular, but like small-pox, and other similar diseases, it becomes pustular, and terminates either in the formation of scales, presenting an appearance like *lepra vulgaris*, and *psoriasis*, or when there is a number of pustules accumulated in one part; the matter is discharged, and dries, forming extensive scabs, which irritate the surrounding parts, particularly if removed incautiously. Willan and Bateman describe five varieties, viz. Impetigo Figurata—I. Sparsa—I. Erysipelatodes—I. Scabida—I. Rodens; four of which differ from each other only in the intensity and extent of the diseased action, and the shape and distribution of the pustules; and they seem to have confounded this disease with scabies. Their fifth variety, the "*impetigo rodens*," Bateman admits he has never seen, but describes it to be a cancerous ulceration extending deeply and extensively, and which is said to commence with a cluster of pustules. Impetiginous disorders are not necessarily accompanied by fever, neither are they contagious, nor, it is said, communicable by inoculation.

*Causes of Impetigo.*—Dr. Willan believes, that this disease is frequently preceded by constitutional disorder, such as pains in the head and stomach; but Mr. Plumbe is of opinion, that when these exist, they are owing to acci-

dental circumstances; and that the disease is always occasioned by local irritation, such as the application of alkali to the skin, &c. My experience leads me rather to agree with Dr. Willan, admitting at the same time, that the exciting cause may be, in many cases, fairly attributed to the local application of substances which irritate the skin, as sugar, lime, pepper, &c., but which would produce no local effects, were the constitution not strongly predisposed to cuticular inflammation. The predisposition is in general to be sought for in the condition of the mucous membranes, and sometimes in the functions of the liver, kidneys, &c.

*Treatment of Impetigo.*—Fomentations, when there is much inflammation, together with the tepid bath, gentle laxatives repeated daily, attention to the diet, and avoiding irritating the part by scratching, and the rough or incautious removal of the scabs, are all points of importance. At the same time, care should be taken to avoid even a chance of the reapplication of the irritating cause. In the acute stage, I have often seen it serviceable to take a little blood from the part, either by means of a fine pointed lancet, or a sharp needle; and if pus be formed, it may be evacuated by the same means with benefit. When the inflammation becomes chronic, stimulating and astringent washes may be used, such as lime juice, common vinegar, solutions of the sulphates of zinc, alumina, or copper, or even, what is still better if there be much pain and irritation, of the nitrate of silver. Cases may occur in which certain well-known ointments, as those of the acetate of lead, nitrate of mercury, &c. may be found useful; but I have generally observed that greasy applications rather retard the cure.

#### PORRIGO.

PORRIGO is a contagious pustular disease which principally affect the young, and may be divided into two kinds, one of which is mild, depending upon some constitutional irritation, and affecting the head and face of children, who are generally of a full habit of body. The other variety affects the scalp, often extensively, and is in particular constitutions, and in circumstances of neglect, very intractable.

I shall first treat of all the mild varieties, under the term *porrigo larvalis*, (commonly called *crusta lactea*,) for notwithstanding what has been stated by authors, the affections called *porrigo larvalis*, and *porrigo favosa* differ so very little, either in their causes or in their appearance, that I consider it unnecessary to give a separate description of each.

I shall afterwards notice the true ring-worm of the scalp, which is termed by some authors simply *Porrigo*, by others *P. furfurans*, *P. lupinosa*, *P. scutulata*.

“The *porrigo* (says Bateman) is a contagious disease, principally characterized by an eruption of the pustules, denominated *favi* and *achores*, unaccompanied with fever. The several appearances which the disorder assumes, are reducible to five or six specific forms.

"1. The *porrigo larvalis*, or *crusta lactea* of authors, is almost exclusively a disease of infancy. It commonly appears first on the forehead and cheeks, in an eruption of numerous minute and whitish *achores*, which are crowded together upon a red surface. These pustules soon break, and discharge a viscid fluid, which concretes into thin yellowish scabs. As the pustular patches spread, the discharge is renewed, and continues also from beneath the scabs, increasing their thickness and extent, until the forehead, cheeks and even the whole face, become enveloped, as by a mask, (whence the epithet *larvalis*) the eye-lids and nose alone remaining exempt from the incrustation. The eruption is liable, however, to considerable variation in its course; the discharge being sometimes profuse, and the surface red and excoriated,—and at other times scarcely perceptible, so that the surface remains covered with a dry and brown scab. When the scab ultimately falls off, and ceases to be renewed, a red, elevated, and tender cuticle, marked with deep lines, and exfoliating several times, is left behind; differing from that which succeeds to impetigo, inasmuch as it does not crack and form deep fissures.

"Smaller patches of the disease not unfrequently appear about the neck and breast, and sometimes on the extremities; and the ears and scalp are usually affected in the course of its progress. In general, the health of the child is not materially affected, especially when the eruption does not appear in the early period of lactation; but it is always accompanied with considerable itching and irritation, which in young infants, often greatly diminish the natural sleep, and disturb the digestion. Whence much debility sometimes ensues; the eyes and eye-lids become inflamed, and purulent discharges take place from them, and from the ears; the parotid, and subsequently the mesenteric glands, become inflamed; and marasmus, with diarrhœa and hectic, cut off the patient.

"Most commonly, however, the disease terminates favourably, though its duration is often long and uncertain. It sometimes puts on a healing appearance for a time, and then returns with severity. Sometimes it disappears spontaneously soon after weaning, or after the cutting of the first teeth; and sometimes it will continue from two or three months, to a year and a half, or even longer. It is remarkable, however, that whatever excoriation may be produced, no permanent deformity ensues." (Bateman on Cutaneous Diseases, p. 158.)

The only additional observation I shall make respecting the *porrigo favosa*, is, that it occurs in adults, particularly in females, and affects principally the scalp, the hair falling off, and becoming of a lighter colour. In both affections, small glands in the neck and behind the ears enlarge, and sometimes suppurate. The worst cases of the disease called *porrigo furfurans* occur after fevers, particularly the eruptive, and also when a scurfy state of the scalp has existed for a considerable time previous to the attack.

*Treatment of the milder forms of porrigo.*—As these diseases occur under some constitutional irritation, local applications are not beneficial, till the



original causes are removed. If they depend on teething, great attention should be paid to relieve the irritation of the gums, by dividing them freely as the teeth advance; and also to the diet, that it be light and easy of digestion; as well as to keep the bowels in a proper state. Every care must be taken to keep the parts clean, and to avoid the application of all ointments, at least in the first stages, when there is acute inflammation. When the inflammation runs high, immediate advantage may be derived from leeches; and I have had no hesitation in applying them to the face. When the inflammation is considerable, but does not run so high as to require leeching, benefit is obtained by bathing the parts with warm saturnine lotions. Should the scabs, from neglect or other causes, become extensive or hard, they should be carefully removed by means of tepid fomentations or poultices. Under the best treatment, the disease will return with each pair of teeth; and not only does it trouble children when getting their milk teeth, but also occasionally when cutting the permanent ones. In many of the cases which occur after eruptive and other fevers, the state of the tongue, the thirst, the appearance of the secretions, and the tumefaction and tenderness of the abdomen, evince that there is considerable irritation or inflammation of the mucous membrane of the stomach and bowels. In such circumstances the patient may be placed under the following treatment: Gentle aromatic laxatives, repeated according to the state of the bowels; a diet consisting of bread and milk, arrow root, sago, whey, &c.; the application of leeches to the abdomen; the tepid bath; and sometimes an eruption of pustules may be produced upon the belly by means of the antimony ointment.

Mr. Plumbe states, at page 121, of his excellent work on "Diseases of the Skin," that, in much neglected cases, a perfect cure has seldom been produced, except when "the operation of plucking the hair from the diseased part has been diligently followed up, and every other possible means taken to check inflammatory action." I must confess that such cases are very rare in this country, so much so, that in my Dispensary practice for the last seven years, the patients averaging about four thousand annually, no such intractable instances have occurred, notwithstanding the reputation for dirtiness which the Scotch have acquired in the minds of their English neighbours!

*Appearances of the most severe forms of porrigo.*—The following description of the disease is compiled from the work of Mr. Plumbe, who has devoted much time and attention to affections of the skin, and more particularly to this disease.

"The degree of obstinacy evinced by a larger portion of cases of this disease, the interruption it frequently occasions to the education of children, (its known infectious nature preventing their admission into schools,) combine with other circumstances to give it a peculiar interest." Mr. Plumbe thinks that there are two particular forms of the disease which produce all the varieties mentioned by authors, and that both occasionally arise spontaneously, or are the result of infection, and that the one may produce the other.

In the first form the hair falls off, leaving sometimes, but not always, circular patches, the margin being clearly defined, and exhibiting a line of scurf considerably thicker than that in the centre. In the centre of the spots, the skin is scurfy, and the hair thinned, and easily extracted by the finger and thumb. What remains of it, is unhealthy in appearance, some hairs being thin and delicate, others being the remains or stumps of those which have been broken, or dropped off. There is a downy substance just rising above, and mixing with the scurf, evidently formed by feeble attempts at the production of new hair. The spots vary in number and in dimensions, and on the hair being removed, exhibit a red and slightly inflamed appearance. Here and there this form of the disease will be observed in an incipient state, and is known by small discolorations of a yellowish red colour before the hair begins to drop off. The spots shew no pustular appearance at the margins, and enlarge slowly in diameter till they unite; but if stimuli, in the form of ointments, have been applied a more active condition often take place, and minute achors form not only on the margins, but on other parts, accompanied by irritation, heat, and itching. The pustules discharge their contents, and form scabs of a light straw colour, under which extensive abrasions of the cutis are sometimes found.

Spots of the same nature may be seen on different parts of the body at the commencement of the affection of the scalp, and for some time after, but they generally disappear before its termination.

This is the usual appearance of the disease in children, whose general health is unimpaired, and skin not particularly irritable; but in opposite conditions, small pustules, instead of vesicles, are perceived, which dry, and form a circular scab. The ring of pustules enlarging in the same manner as that of the vesicles, and their contents drying, and adhering to the margin of the scab already formed, increase its bulk and diameter. The scab becomes a source of increased irritation, and the pustules, under its margin are enlarged and more elevated, raising its edges, and giving the appearance of the *P. lupinosa*.

The other variety of porrigo never assumes the circular, circumscribed form of the one just described; but is diffused over a considerable space, and is pustular from the beginning on the scalp. It can, like the other, be identified with an affection of the skin of other parts, which is partly vesicular and partly consists of papulæ of different sizes.

The pustules are thickly dispersed over the head, and a hair occupies the centre of each, the skin in the interstices being red and inflamed. This form of the disease is accompanied by fever and irritation; and derangement of the digestive organs will be found to have existed, generally, for a long time previous. The absorbent glands at the back of the head and those of the neck inflame, and sometimes, though rarely, suppurate. Inflammation of the cellular membrane, under the scalp, takes place here and there, forming abscesses which burst, and soon heal, but leave the parts which they occupied bald ever after.

As the pustules are ruptured, and their contents distributed over the adjacent parts of the scalp, these parts become inoculated, the disease spreads, and yellowish scabs are formed of an unpleasant odour and aspect, which, unless frequent ablution be had recourse to, rapidly accumulate.

These descriptions, according to Mr. Plumbe, comprehend every thing essential to the history of porrigo (except as regards the *P. favosa*, and *P. larvalis*,) as it occurs in the better classes of society, where cleanliness is particularly attended to, the general health not materially injured, and where the disease is not aggravated, and its character changed, by the improper use of stimulant applications; and, under these circumstances, both will frequently disappear spontaneously by the continued employment of ablution. But, under other circumstances, both forms may terminate in that most obstinate and intractable one—the *P. furfurans* of Bateman, which seems to be the result of long continued irritation. Its principal distinguishing feature is the copious production and rapid exfoliation of morbid cuticle, which from its branny form, is readily entangled by the adhesive matter of the pustules forming a sort of cement. The union of the morbid cuticle, which is secreted in great quantities, with the matter of the pustules, increases the mischief by matting the hair together, and preventing the application of remedies. Upon examination in this state, after cleaning the scalp by the long continued use of warm water, the interstices of the hair exhibit an erythematous redness, and appear altogether deprived of cuticle; the passages by which the hairs arrive at the surface are enlarged, the covering which they receive from the cuticle is destroyed, and its place occupied by a glutinous fluid, which may be seen exuding, and surrounding each individual hair. The quantity of this secretion varies at different times, and the proportion which it bears to that of the exfoliations of the cuticle, determines the consistence and adhesiveness of the diseased part; and hence, when small in quantity, the latter is more dry, harsh and shining.

In this state of the disease, and also under circumstances, when the accumulated secretions are considerable in quantity, the term “scalded head” is generally applied.

*Treatment of the most severe forms of porrigo.*—Cleanliness, and preventing the formation of hard scabs, are of still more importance in the cases now under consideration than in those of a milder character; and when scales have formed, they are to be softened by means of fomentations and a poultice of lint-seed meal. Gentle mercurial laxatives are also serviceable, assisted by the daily use of Harrogate water. The diet must depend entirely upon the state of the constitution, as to whether it ought to be very nourishing and somewhat stimulating, or the reverse; but in all cases the stomach must not be overloaded, and the diet should be dry. The use of the tepid bath will be found very advantageous.

It would be impossible to give an account of all the local remedies which have been used for the cure of porrigo; therefore I shall merely enumerate

some of them. Coarse soft soap, sulphur ointment, or both conjoined ; ointment of the *coccus indicus*—of the oxide of zinc—of calomel—of the red oxide of mercury—of nitrate of mercury—of tar—of nitrous acid—muriate of ammonia—of acetate of lead and opium—hellebore—turpentine—mustard—stavesacre—dulcamara—black pepper—cayenne pepper—galls—savine, &c. Lotions of acetate of lead, sulphates of zinc and copper, infusion of tobacco and tar-water ; equal parts of the spirits of wine and oil, and also the same proportions of vinegar and oil ; muriate of mercury, in alcohol, in water, and lime water ; the black wash, a solution of nitrate of silver, and tincture of the muriate of iron ; blisters. Some recommend the part to be powdered with sulphur ; the direct application of a stick of lunar caustic ; adhesive plaster ; the oil-silk cap, and pitch cap.

In addition to the constitutional remedies for the cure of the true vesicular circumscribed ring-worm of the scalp, I find few cases resist the nitrate of silver, applied by rubbing it carefully over all the diseased parts, and re-applied as soon as the dark-coloured exfoliation separates.

In the other form of the disease, the formation of scabs will be prevented, at least in a considerable degree, by wearing a wax-cloth cap ; when this is done, however, the patient should have two or three changes of caps for the sake of cleanliness, and to avoid an almost insufferable smell. Mr. Plumbe has been very successful, by removing the roots of the hair with a pair of pincers, which is a merciful alternative for the old pitch cap ; and should any local inflammation be excited, he recommends the use of a cooling lotion.

#### SCABIES OR ITCH.

THIS disease, as Bateman admits, almost bids defiance to any attempt to reduce it to an artificial classification, as it appears sometimes in the form of pustules, vesicles, and papulæ, the one variety often running into the other. In all of these forms it is accompanied by a constant and almost irresistible itching. It is contagious, but is not attended with fever ; all parts of the body are liable to it, except perhaps the head, particularly the wrists, between the fingers, the flexions of the joints, &c.

*Causes of scabies.*—It has been universally attributed to contagion, but it appears to me that this cause has its limits, and that it depends as much, if not more, upon a state of the constitution and consequence of diet. It seems to be almost endemic in some remote districts of this country, in Ireland, and in France, where sulphur, the sovereign remedy, has no effect in exterminating it, because it is an eruption produced by unwholesome food. In the army it is rare to see an old soldier affected with itch, the subjects mostly affected are recruits, recently joined, who had either brought the disease into His Majesty's service with them, or had caught it from other recruits, they themselves being predisposed to it by a change of diet and habits.

*Treatment of scabies.*—This is so well known, that medical men are rarely applied to. The specific powers of sulphur, applied externally in the form



of ointment, and taken internally in half-dram doses with an equal weight of cream of tartar, soon curd the affection. Three or four days generally are sufficient. Other remedies have also been extolled, as the root of white hellebore, diluted sulphuric acid, and the muriate of mercury, all of which have been used with benefit. In obstinate cases, Dr. Robertson has seen much benefit arise from mixing half an ounce of powder of white hellebore with four ounces of sulphur ointment.

#### ECTHYMA AND RUPIA.

PERFECTLY agreeing with Mr. Plumbe, that these are merely varieties of the same disease, I have thought it right to consider them together, particularly as they occur under the same states of constitution, and are to be treated in the same manner. Indeed, Bateman observes, when treating of rupia, (at p. 237.) "For practical purposes it might have been included with the ecthymata, as it occurs under similar circumstances with the ecthyma luridum; but the different *form* of the eruption, for the sake of *consistency of language*, rendered the separation necessary." According to Bateman, we have five species of ecthyma, and three of rupia, the one differing from the other only as to the age of the patient, and the colour and form which the eruption takes. Ecthyma and rupia may be defined to consist of an eruption of inflamed pustules, commonly of a large size, raised on a hard circular base, of a vivid red colour, and succeeded by a thick, hard, dark-coloured scab, usually distinct, and arising at a distance from each other. This kind of eruption is indicative of some state of distress under which the constitution labours, and though it is not attended with actual fever, yet a degree of general irritation or erythism is often present with it. Occasionally the eruption is confined to the trunk, but sometimes spreads to the other parts, seldom, however, being seen on the face or hands.

*Causes of ecthyma and rupia.*—According to Mr. Plumbe, "anxiety of mind, accompanied by great bodily exertion, fatigue, low living, the debilitating effects of previous fever; in short, any thing reducing the energies of the constitution beyond a certain extent, is capable of producing it. Almost the whole of the cases which I have had an opportunity of observing have occurred in young people; the majority in young men, who, with constitutions originally not of the strongest class, had imprudently indulged in excesses and irregularities to a great extent, accompanied by privation of rest and other depressing circumstances. Very frequently, in such cases, it is mistaken for a venereal eruption, and the patient himself is readily made to believe in an opinion which his habits have made so probable. If mercury be had recourse to under these circumstances, the disease is much aggravated," &c.—p. 439.

*Pathology.*—From a careful consideration of all the cases of this kind of disease which have fallen under my notice, as well as from what I have read, I cannot help regarding the pustules above described as effects of nature to translate disease to the surface; that they depend upon irritation, and the remains of inflammation in the mucous membranes generally, and that they are not produced by mere debility of constitution, as is generally supposed.

*Treatment of echthymia and rupia.*—According to the above views, the treatment is simple, and consists in the daily use of the tepid bath; mild laxatives, occasionally combined with a mercurial preparation; light nourishing diet, avoiding beef tea, and all other forms of animal food, till the tongue improves in appearance, and the stools look more natural. In the course of some days, the sulphate of quinine will be found very serviceable; but it is not to be employed until the tongue becomes quite clean. On some occasions I have seen benefit derived from a blister applied on the lower part of the chest, more particularly when the sound of respiration announced the presence of a bronchitic affection.

## ACNE.

BATEMAN has divided this simple disease into four varieties, viz. *acne simplex*, *punctata*, *indurata*, and *rosacea*, thus creating distinctions without differences, the only effect of which is to embarrass students. This affection has also obtained the name of slow suppurating tubercles; and appears to me, that the reason why it is called a tubercle, and classed as such in all the books on cutaneous diseases, except Mr. Plumbe's, is that a hard painful, circumscribed body is felt under the skin, which is perceived for a considerable period, now and then becoming painful, and continuing in this state for many months, and at last suppurating, perhaps, only from having been frequently irritated.

There cannot be the least doubt, that the pathological views of Mr. Plumbe concerning acne are quite correct. They accord with the opinions upon which I have acted for a number of years, viz. that acne is a diseased condition of the sebaceous follicles. In the slighter cases, the sebaceous matter concretes, distends the follicle, irritates it, and produces inflammation; slight suppuration takes place, a pimple is formed, and sebaceous matter is discharged, with or without a small quantity of pus. In the severer cases a higher degree of inflammation is produced, involving the surrounding cutis; the suppuration is more extensive, and slower in its progress, and perhaps the part suppurates again and again until the follicle is emptied, or its structure is completely destroyed.

The parts chiefly affected are the forehead, the sides of the nose and the shoulders. The age at which acne most frequently occurs is that of puberty, alike affecting males and females.

*Causes of acne.*—Although acne be not preceded by fever, and notwithstanding that it seems to be produced by the sebaceous matter, yet it is not difficult to shew, that it is connected with the state of the constitution, not only from the age at which it occurs, and the bad habits of drinking and gormandizing which frequently induces it, but also from the state of the tongue and the digestive organs. It occurs likewise under diseased states of menstruation, and under sedentary habits.

*Treatment of acne.*—This may be divided, as in other cases of skin diseases, into constitutional and local. The first consists in attention to the bowels and diet, and taking all the ordinary means to improve the powers of digestion, including the warm bath. The local treatment consists in avoiding stimulating applications during the inflammatory stage, and puncturing the point of the pimple, to prevent suppuration, and allow a free passage to the sebaceous matter, without destroying the follicular structure. This has also the effect of preventing any permanent hardness, which so frequently happens when the process of suppuration is very slow, or when it does not take place at all. If matter have formed, the lancet should be used to allow it to escape, and gentle pressure applied at the same time to force out the hard sebaceous matter. I know many females in whom marks were left by the disease, before the plan of early puncturing the pimples was adopted. Individuals liable to this affection, should pay scrupulous attention to their diet, and to the state of bowels; they should also use frictions with a flesh-brush, a piece of flannel, or a soft towel.

#### SYCOSIS.

THIS affection scarcely deserves a separate consideration from acne; I agree with Mr. Plumbe, that it is produced by follicular obstruction, and consequent inflammation occurring in parts covered with hair; and its principal seats are the chin in men, and the head in both sexes, particularly the margin of the hairy scalp, in the occiput, around the forehead and temples, and near the external ear, which is also liable to be included in the disease. Sycosis is more troublesome than acne, as all eruptive diseases situated on parts covered with hair are observed to be.

*Treatment of sycosis.*—The constitutional and local treatment recommended in acne must be followed up, with this addition in severe cases, that not only is the point of the lancet necessary, but the forceps also, to extract any hair which may appear to be a source of irritation; and it is particularly necessary on the chin, where on many occasions the root of the hair itself will be found in a diseased thickened state. The extraction is seldom attended with any pain.

## CHAP. V.

### SQUAMOUS DISEASES.

---

UNDER this designation I shall consider the following diseases,—*Lepra*, *Psoriasis*, and *Ptyriasis*, which latter I might perhaps without any disadvantage, altogether pass over, because I consider it as the mildest form of *lepra*. I have not included *ichthyosis*, or fish-skin disease, because it is exceedingly rare; it has the same pathology with *lepra*, and similar treatment is applicable to this affection. One form of it, *ichthyosis cornea*, is a surgical disease.

#### LEPRA.

By this term is designated a disease exhibiting red, inflamed, elevated spots and patches, in many cases not larger than a split pea, which yield almost daily crops of scales or scurf, and is rarely, if ever, accompanied by a vesicular or pustular appearance, unless such formation be accidentally produced by roughly tearing out hairs. After seeing the disease once, the scales can never be mistaken for scabs formed by the drying of pustules or vesicles, unless the affection have run into the state called *psoriasis*, which falls next to be described. Willan and Bateman have divided the disease into three species, viz. *lepra vulgaris*—*alphoides*—and *nigricans*. The first two ought to be regarded as different degrees, or perhaps rather stages of the same affection; while the last species, *nigricans*, differs in the colour and state of the constitution at the time; and I heartily agree in the following remarks of Mr. Plumbe: "That they may therefore be dispensed with with advantage, is obvious, inasmuch as they have had their share in creating the confusion elsewhere alluded to, and discouraging the student in the prosecution of his inquiries. It is to little purpose that preceding authors have expended so much time in investigating the confused records of ancient times, to determine what was meant by the term, and to ascertain the correct history of the disease, if new difficulties in its study are to be invented by encumbering it with useless and multiplied names," (page 128.) On looking minutely at the part affected, it is observed to have a shining hard surface, owing to a somewhat transparent, smooth, polished scale, which separates in a day or two, and to be encircled by a dry, red, and slightly elevated border. When the scales are removed, the skin underneath appears smooth, red, and shining, and ge-



nerally free from cuticular lines. As the diseased spots extend, fresh scales are produced, having a somewhat different appearance from those formed at the beginning of the disease, and they do not extend uniformly over the diseased surface in one continued scale, but separate more like scurf. The disease very generally commences on the extremities at parts where the bones lie nearest the surface, but I have often observed the eruption appear first on the surface of the abdomen, breast, and shoulders. The head, face, and hands, often become involved in the disease, and in very severe cases the nails of the fingers and toes are much thickened, incurvated at the extremities, and sometimes fall off. When the disease covers a considerable portion of the body, a large quantity of scurf is found in the bed in the morning, which is rapidly reproduced.

More or less of an itching or a tingling sensation is experienced by the patient when heated by exercise, and after getting warm in bed; but when the disease becomes extensive, and attended by considerable inflammation, extreme soreness, stiffness, and sometimes severe pain are produced, more particularly at the flexures of the joints, where the skin often cracks, discharges serum, and in fact runs into the state termed psoriasis. The parts likewise swell so much under these circumstances, that I have seen a limb fully more than a third above its natural circumference.

It is surprising to find Bateman stating, at page 28, that in the worst of these circumstances "there is no constitutional disturbance." If by this expression he means to say that there is no fever, the statement is correct, but there is frequently considerable and severe *constitutional disturbance* without the existence of febrile symptoms; and when speaking of the causes of this disease, I shall endeavour to describe the actual constitutional derangements upon which the disease appears to depend.

*Causes of lepra.*—Leprous disorders are very often met with among the poor in all countries, but they are more frequent and severe in warm climates, and in countries where the poor are most destitute. I do not believe that they originate from want of cleanliness, but certainly when once produced, this circumstance renders them more intractable. All causes which have a tendency to produce functional diseases of the chylopoietic viscera may be ranked as causes of lepra in particular constitutions. Sometimes, and most frequently, it is produced by unwholesome and indigestible food, particularly such articles as yield little nourishment. Affections of the mind, &c. may likewise give rise to it. The rich are not exempt from this disease, and it frequently attacks those with gouty constitutions. For many years past, I have paid considerable attention to disorders of the skin, and a great many cases of lepra and psoriasis have fallen under my observation: and gastrointestinal irritation has been discovered in all the cases but one: and in that one, there were great mental anxiety and despondency, with hepatic derangement. There can be no doubt that the disease, in the first instance, is seated in the vessels of the cutis which are employed in producing the cuticle, and that its nature is inflammatory.

*Treatment of Lepra.*—In detailing the treatment, I shall describe the different plans which experience and pathological considerations have led me to follow with very great success, and I shall notice these under different heads:

1. In all cases, it is necessary to attend to the bowels by very gentle, but frequently repeated laxatives, occasionally combined with calomel, and assisted also by the daily use of Harrogate water. The diet must likewise, in all cases, be attended to; and it will be found that the disease often depends upon one particular article of diet, varying in different constitutions, as dried fish, shell-fish, salted meats, new bread, coarse and unwholesome bread, potatoes, onions, garlic salads, cheese, oat-meal, sweet-meats, bitter almonds, nuts, various kinds of fruits, particularly if the skins or husks be swallowed, broths and soups, different kinds of malt liquors, cyder, wine, spirits, &c. Indeed the diet is of such vital consequence, that I find it necessary in many obstinate cases to make my patient write down a daily list of every article which he has put into his stomach, so that by comparing his condition with the food he has been using, we are between us able at last to detect those articles which disagree. It is also necessary to take care, that while the patient has sufficient clothing, his skin is not kept too hot; and I have sometimes found it of service to cause linen to be worn next the skin instead of flannel. When it can be managed, the inner garments should be changed daily, particularly in severe cases, and this is still more necessary when the disease takes on the appearance which constitutes psoriasis. When the patient goes to bed, care should be taken that his feet be warm, and that he be not over-heated by too many bed-clothes. The tepid bath should be used daily, or when that is inconvenient, the whole body should be sponged twice a-day with soap and warm water, or vinegar and water.

2. If the inflammation of the skin be very severe and extensive, I commence by taking blood from a vein in such quantity as may be necessary, attending to the state of constitution as well as the extent of the inflammation, and afterwards proceed with the plan above described; and there are few cases which resist these means.

3. In old or very intractable cases, where these remedial means have been tried without success, recourse ought to be had to sulphurous baths and fumigations, which can scarcely be praised too highly; but they must not be used when the inflammation is acute. When these cannot be obtained, some benefit may be derived from the external application of Harrogate water, several times a-day.

4. In still more intractable cases, where the above remedies have failed, or where sulphur baths cannot be obtained, considerable benefit will be derived from the use of lime-juice, externally as well as internally; but I place more dependence on the employment of an alcoholic solution of the oxymuriate of mercury in the proportion of four grains to the ounce, beginning with ten drops twice or thrice a-day, and increasing each dose to twenty, thirty, or forty drops, of course attending at the same time to the diet, bowels, clothing, &c.

5. Should these plans fail, recourse is to be had to the use of arsenic, which is placed last in the list of remedies, because its use is frequently attended by more constitutional disturbance. And I have frequently seen it fail in cases where the other plans have succeeded. For some years past I have only had occasion to employ it twice, but on both occasions without success; in one instance it was perserved in till the patient was nearly poisoned. Mad-dar or madaar, an Indian remedy, was also tried in this case, but only with temporary benefit. Various ointments, such as that of tar, nirate of mercury, and carron oil, have frequently been employed, but according to my experience, not with much success.

A most injurious plan is followed by some, of putting all patients affected with lepra, and other skin diseases, on farinaceous food, with which they stuff themselves in such a manner as to increase the functional derangement of the stomach and bowels, thereby producing an inveterate affection. Many instances of this kind of mal-treatment fall annually under my care, in which a change of diet has generally affected a beneficial change in the character of the disease; an interesting case of this nature I shall notice, when treating of psoriasis. In addition to what has been said already respecting diet, it may be shortly remarked, that in cases where the inflammation of the skin runs high, an abstemious diet should be recommended, but, generally speaking, a moderate quantity of animal food is necessary. In no case should the patient be allowed to load the stomach with any article, and he should be cautioned particularly against taking above a small tea-cup full of soup of any description; he must likewise altogether avoid taking that "animo-vegetable decoction," called Scotch broth. The tongue should be frequently examined as well as the stools, as from both of these we may draw conclusions respecting the effects of diet and medicines. Tonics are often serviceable, as well as a moderate allowance of such stimuli as are found to agree best with the patient, and which he can afford.

#### PSORIASIS.

ACCORDING to Bateman, "Psoriasis, or scaly tetter, occurs under a considerable variety of forms, exhibiting, in common with lepra, more or less roughness and scaliness of the cuticle, with redness underneath. It differs, however, from lepra in several respects. Sometimes the eruption is diffuse and continuous, and sometimes in separate patches of various sizes; but these are of an irregular figure, without the elevated border, the inflamed margin, and the oval or circular outline of the leprous patches; the surface under the scales is likewise much more tender and irritable in general, than in lepra; and the skin is often divided by rhagades, or deep fissures." And he might have added, that when the inflammation runs high, and extends deep into the substance of the cutis, there is often a very considerable discharge from these fissures, and even from the general surface, forming extensive scabs; but this, for the most part, never takes place except in mismanaged cases. It is



to be regarded in every respect, pathologically speaking, as a similar disease to lepra. I have seen the eruption leprous in one part of the limb, and psoriatic in another, particularly between the fingers, and at the flexures of the joints. Lepra may be converted into psoriasis by bad management, and particularly by the application of irritating substances to the diseased parts. Psoriasis may be converted into lepra by a general bleeding, thereby mitigating the local inflammation. From all the facts which experience has enabled me to collect, I cannot but regard psoriasis as an aggravated form of lepra, and by treating it upon corresponding principles, I have been very successful in curing the affection.

Willan and Bateman have divided psoriasis into four varieties—viz. the *guttata*—*diffusa*—*gyrata*, and *inveterata*; but I shall avoid such distinctions, as no good practical results can be expected from them.

This disease like lepra, may be very partial, but I have seen several cases where the whole of the extremities were covered with psoriasis, while the trunk of the body, the face, and the head, were affected with lepra. I shall now relate the case which was formerly alluded to, (p. 550.) A gentleman of a healthy, strong constitution, accustomed to good living, and engaged in an extensive speculation, experienced a great and unexpected reverse of fortune. Possessed of highly honorable feelings, he was determined to pay off every shilling of debt, by reducing his establishment, and altering his style of living, and, it is to be regretted, by denying himself many of the common necessities of life. For upwards of two years he lived almost entirely upon fish and potatoes, and he employed himself so assiduously at his business, that he never went out to take exercise except when obliged. In the course of time, a leprous eruption appeared upon his arms and legs, but it gave him little trouble, and he did not apply for medical advice; by and by it appeared here and there upon the trunk of the body, still it attracted little of his attention. One day he slipped his foot and sprained his ancle, which swelled much and was attended with pain. He sent for a doctor, who confined him to bed, leeches the part affected, put him upon the strictest antiphlogistic regimen, and prescribed a dose of salts daily. Under this treatment the leprous eruption extended rapidly; his appetite became bad, the tongue foul and loaded. At the end of a month the surface of both extremities was inflamed, and the disease was now converted into psoriasis, with excessive discharge, swelling, and itching. All kinds of local applications were tried without benefit; and when I was consulted, the gentleman was in the following condition. His legs and arms were very much swollen, painful, and so itchy that he was deprived of rest; they were covered with scabs, which were produced by the partial drying of a profuse discharge of fetid serous fluid, which seemed to ooze from every pore of an intensely red, shining, and highly inflamed cutis. So profuse was the discharge, that it soiled the bedding, and notwithstanding every precaution, no means could be devised to prevent the linen from sticking to the affected parts, the separation of which produced



great pain, aggravated the local inflammation, and frequently caused bleeding from the parts. The trunk of the body, the face and scalp, were also affected with that form of *lepra* termed *vulgaris*. His strength was destroyed, partly by the remedies and the diet, and partly by the constitutional irritation, and want of sleep, but principally by the constantly profuse discharge. He had now been confined for the most part to bed for about 140 days. The pulse was quick and weak; he had constant singing in his ears, giddiness upon raising his head from the pillow; and for some days had always fainted upon getting up for necessary purposes. Notwithstanding the quantity of salts and other purgatives he had taken, his bowels were in bad order, the stools were scanty, very dark in colour, and fetid; the tongue was swollen, rough, fissured, and covered with a thick crust. The following treatment was adopted. The carron oil was changed for a warm solution of sugar-of-lead to the parts affected, which was applied by means of bandages kept wet with it; a few doses of calomel were exhibited; and he was allowed some wine and water. From this time he enjoyed good rest; the tongue improved so much in two or three days, that he was allowed a small quantity of animal food; the heat, inflammation, and discharge, were so much diminished in the course of three or four days, that the saturnine lotion was discontinued, and the limbs were enveloped in fine oiled silk. He made such a rapid recovery, by the assistance of small doses of blue-pill and Harrogate water, that he considered himself quite well in the course of three weeks; and although he has since had several slight relapses, they were attributed to errors of diet, and inattention to the bowels. Exactly a year afterwards, the disease returned in a severer form on the extremities, but was speedily cured by general bleeding and the employment of the local remedies. This last paragraph was written more than two years subsequent to the first illness, and the gentleman is now in excellent health.

*Treatment of psoriasis.*—The above cases shews the treatment that I would recommend; and the only circumstances which ought to be mentioned in addition to what has been stated respecting lepra, are the greater necessity for cleanliness, and the application of oiled silk to the affected part.

#### PITYRIASIS.

THIS is a very superficial affection, consisting of irregular patches of slender scales, which repeatedly exfoliate and recur but which neither form crusts, nor are accompanied by fluid excretion, or excoriations; and it is stated not to be contagious. The most frequent situation of pityriasis is the scalp; and when it attacks infants, it is commonly called "dandriff;" Willan and Bateman have given it the term *pityriasis capitis*. It is now and then observed in adults, particularly those of dark complexion. Cleanliness in this instance, prevents the disease from being troublesome; and it may be easily removed, even when the scurf is pretty thick, by washing the part with soap and water, and a soft brush daily, or using a solution of the carb. sodæ. When neglected, however it runs into a state much resembling the worst forms of of porrigo.

Pityriasis in a severe form now and then occurs in adults, producing considerable discomfort to the individual. According to Mr. Plumbe, different parts of the body become the seats of much itching and tenderness; and when friction is employed, scabs of considerable thickness fall off, the parts below exhibiting a red, shining, glossy, and sometimes slightly moist surface. The skin of the chest and back are the common seats of this form of the affection; but the hairy scalp and its margin also partake of it. The colour of the parts, when covered with the diseased cuticle, is of a lightish yellow, or copper hue; when the cuticle is removed, it approaches more to red; but the cutis at no time appears of the colour consequent on common abrasion. The figure of the patches is very various, "here and there are spots of from half an inch or less, to two or three inches in diameter, approaching perhaps to a circular form. These will perhaps be found around the margin of a larger patch, the outlines of which are as irregular as the outlines of a map of an island. The colour of these larger patches also varies from time to time in different parts from a light straw to a reddish colour; hence the terms *pityriasis versicolor*, *p. rubra*, which Willan and Bateman have formed into varieties.

*Causes and treatment, of pityriasis.*—I have seen only two cases of this disease which required any treatment; and therefore I shall make free with the pathological and practical remarks of Mr. Plumbe. He says the disease as occurring in adults, pretty uniformly attacks individuals of delicate health; and diminished energy of circulation. In such states of the system, the cutaneous vessels partake of the general debility, and have the disadvantages of their locality, as furthest from the centre of circulation: and being exposed at the same time to vicissitudes of temperature, they are incapable of the formation of sound cuticle, and produce instead of the delicate and ill-formed substance described. "The state of the circulation and system, in all cases which come under our notice, proves this view of the case to be correct. I have never seen a single case, (says he,) where want of energy was not apparent, and very few where the supply of this was not followed by speedy recovery. Violent and distressing impressions on the mind, original debility of constitution, the depressing effects of long continued illness in warm climates, &c. are found very commonly to have been co-existent with the first appearance of the disease."

The constitutional treatment which will be found most successful, is that which is in strict accordance with the above principles. Measures which tend to invigorate the system, will be always proper, if not forbidden by organic disease. Bark, steel, sea-bathing, gentle exercise in the open air, ease of mind, nourishing food, and plenty of rest, constitute what is usually requisite on such occasions. Now and then the sulphur vapour bath has been rendered necessary, the cutaneous vessels having failed to recover their tone, though the general health had been much improved. When the scalp is much affected, and the scurf forms in considerable quantities, the free use of a solution of acetate of zinc, in equal parts of rose water and proof spirits,

constitutes an agreeable and useful application. In addition to these remarks, it may be mentioned, that in the few cases which have fallen under my notice, the internal and external use of fresh lime juice has been found beneficial, or common vinegar applied externally.

## CHAP. VI.

### VESICULAR DISEASES.

---

THE following is Bateman's definition of vesicle: "A small orbicular elevation of the cuticle, containing lymph, which is sometimes clear and colourless, but often opaque, and whitish, or pearl-coloured. It is succeeded either by scurf, or by a laminated scab." This author has divided his order vesiculæ into seven genera, viz. varicella, vaccinea, herpes, rupia, miliaria, eczema, aptha. Each of these he has subdivided into several varieties. Some of his orders, as varicella, vaccinea, miliaria, and aptha, are misplaced; I shall include all that I have to say on vesicular diseases under the term herpes.

#### HERPES.

WILLAN and Bateman have subdivided herpes into six species, viz. herpes phlyctænodes, h. zoster, h. circinatus, h. labialis, h. præputialis, h. iris. According to the latter of these authors, this appellation is "limited to a vesicular disease, which, in most of its forms, passes through a regular course of increase, maturation, and decline, and terminates in about ten, twelve, or fourteen days. The vesicles arise in distinct but irregular clusters which commonly appear in quick succession: and they are set near together, upon an inflamed base, which extends a little way beyond the margin of each cluster. The eruption is preceded when it is extensive, by considerable constitutional disorder, and is accompanied by a sensation of heat and tingling, sometimes by severe deep-seated pain in the parts affected. The lymph of the vesicles, which is at first clear and colourless, becomes gradually milky and opaque, and ultimately concretes into scabs; but, in some cases, a copious discharge of it takes place, and tedious ulcerations ensue. The disorder is not contagious in any of its forms."

Herpetic eruptions occur in various parts of the body. When on the lips and angles of the mouth, the disease is called herpes labialis,—when in the form of a belt across the shoulder, or round the waist, like a sash, it is termed herpes zoster, and in common language "shingles." When it has no certain seat, but sometimes appears on one part of the body, sometimes on another, with the exception of the situations already mentioned, the disease is termed herpes phlyctænodes; but surely difference of locality is no reason why different appellations should be applied.



This class of disorders is for the most part, if not always, accompanied by constitutional disorder sufficiently marked to attract attention, such as that produced by sub-acute inflammation of the bronchial membrane. Hence we find it taking place towards the termination of what are called catarrhal fevers, producing immediate constitutional relief, which the strongest remedial agents had perhaps failed to accomplish. I have also often seen the other forms of the affection, particularly that described as herpes zoster, occur in the course of bronchial inflammation; but more particularly when there were strong marks indicating a disordered state of the stomach and bowels.

Females appear to be more subject to this disease than males, and people who are delicate, more than the strong and athletic.

*Causes of herpes.*—Besides occurring under the forms of internal disease already mentioned, it has been referred to the suppression of hemorrhoidal or menstrual discharge, sudden change of habits as to diet, but more particularly from an active to a sedentary life; and particular articles of food may certainly produce it.

With respect to the pathology of the herpetic eruption, its seat is in the superficial vessels of the skin, and its nature is inflammatory, the effect of which is the effusion of serum, separating the cuticle by mechanical distension; we see similar effects produced by blisters, and some other external irritants.

*Treatment of herpes.*—This is very simple, and consists in relieving internal disorder, and by subduing any constitutional disturbances that may exist. The lancet is not often required; but I have seen it sometimes necessary, and very beneficial; in general, however low diet, consisting of arrow-root, and the like; gentle laxatives, repeated twice or thrice in the twenty-four hours, the warm bath, and confinement to the house, will be advisable. The best local treatment is to open each vesicle early, and occasionally to apply fomentations; but in the most severe form of the complaint, viz. the herpes zoster, where the pain is very severe, and when consulted early, the best effects will be produced by applying a dozen of leeches on the inflamed part; if done before many vesicles have appeared, the further progress of the disease will be stopped; and I observe that Mr. Plumbe has, in two or three instances, applied small blisters to the uninflamed skin in the neighbourhood of the vesicles, not only with the effect of checking their extension, but producing a shrivelling of those already formed. If it be not found necessary either to apply leeches, or a blister, the best application after opening the vesicles, is a poultice of lint-seed meal; and I can see no objections to the occasional application of a cooling wash, composed of a solution of acetate of lead.

When treating of syphilis, I shall speak of an herpetic eruption affecting the prepuce, which is consequently termed *herpes præputialis*.

## PEMPHIGUS AND POMPHOLYX.

There can be no doubt but that the diseases described under these two names, have in all ages been confounded with each other, The terms denote the existence of large vesicles, which are termed "bullæ," and in common language "blebs." The affection is called pemphigus, when the blebs are preceded or accompanied by fever, and pompholyx when without fever, and when the eruption is without an inflammatory base. The existence of pemphigus as a distinct disease, was denied by Cullen and others, but it has been described by many authors. I have frequently seen large bullæ take place in the course of slight, as well as severe fevers; but instead of considering them thereby entitled to any specific character, I have always looked upon their occurrence as an accidental circumstance, and have made no difference in the treatment of the original disease. With respect to local treatment, I have only to observe that the bullæ are not to be interfered with, unless there are considerable local irritation and pain, when a small puncture is to be made with the point of the lancet, and perhaps a light poultice of lint-seed meal applied; but it is rarely necessary to interfere with them, unless from the restlessness of the patient they are ruptured, when the same application may be made to them.

*Pompholyx*.—As far as I understand, this disease, as defined by Willan and Bateman, is of very rare occurrence; one case only has been seen in this city. It is in the person of a poor man who appears to have no constitutional distress, and who is able to work hard for his daily support.

## CHAP. VII.

---

### PURPURA.

I PURPOSE to treat in this chapter of that kind of purpura, which is commonly known by the term *purpura hæmorrhagica*.

A number of diseases which appear on the surface of the body have been already described. Some of them terminate by suppuration, others by a secretion of serum; a third class by the formation of scales, &c.; and now we have to consider an affection where blood is poured out under the cuticle, forming appearances which are termed *petechiæ*, and upon the surface of all the cavities lined by mucous and serous membranes, forming dark-coloured spots, resembling in every respect those found on the cutis. Purpura is a disease which is accompanied by such threatening symptoms, that it has riveted the attention of almost every medical man who has seen it; but we are still in total ignorance of the pathology of the disease. The following description of *purpura hæmorrhagica* is taken from Bateman:—"The *petechiæ* are often of a large size, and are interspersed with *vibices ecchymoses*, or livid stripes and patches, resembling the marks left by the strokes of a whip, or by violent bruises. They commonly appear first on the legs, and at uncertain periods afterwards, on the thighs, arms, and trunk of the body; the hands being more rarely spotted with them, and the face generally free. They are usually of a bright red colour when they first appear, but soon become purple or livid; and when about to disappear, they change to a brown or yellowish hue; so that, as new eruptions, arise, and the absorption of the old ones slowly proceeds, this variety of colours is commonly seen in the different spots at the same time. The cuticle over them appears smooth and shining, but it is not sensibly elevated; in a few cases, however, the cuticle has been seen raised into a sort of vesicles, containing black blood. This more frequently happens in the spots which appear in the tongue, gums, palate, and inside of the cheeks and lips, when the cuticle is extremely thin, and breaks from the slightest force, discharging the effused blood. The gentlest pressure on the skin, even such as is applied in feeling the pulse, will often produce a purple blotch, like that which is left after a severe bruise.

"The same state of the habit which gives rise to these effusions under the cuticle, produces likewise copious discharges of blood, especially from the in-

ternal parts, which are defended by more delicate coverings. These hæmorrhages are often very profuse, and not easily restrained, and therefore sometimes prove suddenly fatal. But in other cases they are less copious; sometimes returning every day at stated periods, and sometimes less frequently, and at irregular intervals; and sometimes there is a slow and almost incessant oozing of blood. The bleeding occurs from the gums, nostrils, throat, inside of the cheeks, tongue, and lips, and sometimes from the lining membrane of the eye-lids, the urethra, and the external ear; and also from the internal cavities of the lungs, stomach, bowels, uterus, kidneys, and bladder. There is the utmost variety, however, in different instances, as to the period of the disease, in which the hæmorrhages commence and cease, and as to the proportion which they bear to the cutaneous efflorescence.

“This singular disease is often preceded for some weeks by great lassitude, faintness, and pains in the limbs, which render the patients incapable of any exertion; but, not unfrequently, it appears suddenly, in the midst of apparent good health. It is always accompanied by extreme debility and depression of spirits; the pulse is commonly feeble, and sometimes quickened; and heat, flushing, perspiration, and other symptoms of slight febrile irritation, recurring like the paroxysms of hectic, occasionally attend. In some patients, deep-seated pains have been felt about the præcordia, and in the chest, loins, and abdomen; and in others, a considerable cough has accompanied the complaint, or a tumour and tension of the epigastrium and hypochondria, with tenderness on pressure, and a constipated or irregular state of bowels. But in many cases, no febrile appearances have been noticed; and the functions of the intestines are often natural. In a few instances, frequent syncope has occurred. When the disease has continued for some time, the patient becomes sallow, or of a dirty complexion, and much emaciated; and some degree of œdema appears in the lower extremities, which afterwards extends to other parts.

“The disease is extremely uncertain in its duration; in some instances it has terminated in a few days, while in others, it has continued not only for many months, but even for years. Dr. Duncan related a case to me, when I was preparing my thesis on this subject, which occurred in a boy, who was employed for several years by the players at *golf* to carry their sticks, and whose skin was constantly crowded with petechiæ, and exhibited vibices and purple blotches, whenever he received the slightest blow. Yet he was, in other respects, in good health. At length a profuse hæmorrhage took place from his lungs, which occasioned his death. When the disease terminates fatally, it is commonly from the copious discharge of blood, either suddenly effused from some important organ, or more slowly from several parts at the same time. A young medical friend of mine was instantaneously destroyed by pulmonary hæmorrhage, while affected with purpura, in his convalescence from a fever, after he had gone into Lincolnshire to expedite his recovery; and I have seen three instances of the latter mode of termination, in all of



which there was a constant oozing of blood from the mouth and nostrils, and at the same time considerable discharges of it from the bowels, and from the lungs by coughing; and in one it was likewise ejected from the stomach by vomiting for three or four days previous to death. On the other hand, I lately saw a case of purpura simplex, in which the petechiæ were confined to the leg, in a feeble woman about forty years of age, who was suddenly relieved from the eruption, and attendant debility, after a severe catamenial flooding." (P. 104.)

The result of the following highly interesting cases of purpura hæmorrhagica, shews in a marked manner the benefit of venæsection, conjoined with purging. It is extracted from the first vol. of the Trans. of Med. Chirurg. Society of Edingburgh:—A boy aged 6, of a weak and strumous constitution, with swelling of the glands of the neck, and a slight inflammatory affection of the eyes, was observed to be particularly unwell on the 24th April 1823, and the two following days. He was dull, thirsty, with flushed face, and manifested an inclination to sit near the fire. On 27th, spots like flea-bites appeared on a great part of his skin, and soon increased considerably; some were small and red, and others large, and of a purple colour. On 28th, blood oozed from the mouth, with occasional bloody sputa. On the 29th, the urine became turbid, and of a reddish colour; he moved about occasionally, unwilling to remain in bed; and even, on the forenoon of this day, walked a distance of at least a mile and a half for medical aid. Dr. Ebenezer Gairdner first visited this little patient on the afternoon of the 1st May, and saw at once that it was a distinctly marked case of the purpura hæmorrhagica of Willan. The whole body, the anterior part of both thighs, the conjunctiva of the right eye, the tongue, the Schneiderian membrane, were all affected with purple spots. Blood oozed from the gums, which were neither soft nor swollen; breath extremely fetid; and Dr. Gairdner was told that he occasionally vomited blood. There were fulness, with pain on pressure in both hypochondria, particularly in the left; the abdomen was rather tumid, and affected with obscure pain; belly costive; urine free, and in appearance the same as before described. Pulse quick and sharp; slight heat of skin. He seemed little oppressed, was attentive and acute, and expressed curiosity to know what were the marks on his skin. A saline cathartic immediately. Fifteen drops of dil. sulph. acid thrice a-day. To be bathed in tepid water morning and evening.

*May 2d.* Passed a bad night. There were now considerable oppression, and hurried respiration. The hæmorrhagic symptoms had increased, with more petechiæ and vibices; pulse 110, wiry; skin hot and dry. Blood was immediately drawn to the extent of about 10 ounces, when the boy became suddenly sick, and vomited. Considerable difficulty was experienced in suppressing the flow of blood from the wound, and during the remainder of the day he lost some quantity, which could not, however, be estimated, notwithstanding which the pulse at 4 o'clock P. M. was 124 and wiry, the skin was also hot. He was afterwards drowsy, and slept quietly for three hours and

a half. The tepid bath and acid drops to be continued, and a powder containing three grains of calomel and the same quantity of jallap, the next morning, and repeated every three hours, until the full effect was produced.

3d. Blood still oozing from the orifice in the vein; there were less oppression and dyspnœa; the pulse, though quick and sharp, was less so than yesterday; tongue improved; little thirst; urinary and alvine discharges nearly as before. The acid drops, laxative powders, and the tepid bath, to be continued.

4th. Pain under the *os frontis*; ecchymosis of the eye greater; the pain in both hypochondria increased with considerable tension; pulse 124, firmer. Another bleeding was determined upon; and when the bandage was loosened, the wound was still found opened, the part corresponding to the compress had become ecchymosed, but without swelling. At first the blood oozed out, and soon flowed, but not very freely; the patient became faint, so that only two or three ounces were obtained. At evening visit, it was found that there had been some draining of blood from the orifice; but the patient was then in a quiet, sound sleep; pulse the same as in the morning; skin rather soft, and not very hot; and it was stated, that he had been asking for food in the course of the day.

5th. Passed since yesterday a good deal of urine, which was now pale and limpid; pulse 102; heat moderate; tongue clean and moist; gums still tender; and during the night there had been some oozing of blood from them. Has taken a little light nourishment with some relish. Bowels opened by the powders; the stools were excessively offensive, and very black coloured; some increase of pain, with tension of the abdomen, and in both hypochondria. Fomentations, and small doses of castor oil. In the afternoon, the pain had increased, and he moaned much; during the day several copious and grumous stools were passed; and at 4 P. M. he seemed much distressed. A mixture with an ounce of bark infused in a pound of port wine, with an equal quantity of water; was then ordered to be exhibited in small doses; castor oil to be continued. In the evening he passed more black feces; he was relieved from pain, and had some sleep.

6th. Passed a good night; little or none of the bark infusion had been taken; he also refused the oil, therefore a laxative powder was ordered. The same dark-coloured feces were passed from the bowels with less pain; no oozing of blood from the gums, nor in the sputa; pulse 98; temperature of the skin natural.

7th. Symptoms favourable. Much black feces discharged.

8th. Stools of a natural appearance; petechiæ began to fade; pulse 96, not weak; appetite improving.

From this time he recovered rapidly. On the 14th he was out taking an airing; and on the 16th was running about, and his parents thought him to be in better health than he had been before the accession of the present complaint.

The blood first drawn coagulated very slowly, without separating any serum; on the following day it looked like a tremulous jelly, the top being of a greenish buff colour, interspersed with brownish spots. That which was afterwards discharged had, as it came from the arm, more the appearance and consistence of turbid lymph, or fluid in which some reddish colouring matter was in suspension, and the cloths which were soiled did not present the usual stains of blood, but something like those of dirty water, interspersed with large stains of a reddish brown colour.

The reader is referred to the volume of the "Transactions," for an interesting account of the analysis of the urine.

In the same volume of the "Transactions" will be found another interesting case of purpura, with an account of the traces of disease discovered on dissection. A girl aged twelve, of the scrofulus constitution, although otherwise in good health and spirits, with the exception of a chronic disease in her left wrist, was first observed on the 21st June 1823, to have a dark spot on her under lip, as if she had been putting a pen in her mouth. Next morning similar spots were observed thickly studded over her legs, and also a considerable number on her arms, but she made no complaint, and was amused at being thought sick, when she felt in perfect health. She walked about a mile and returned with perfect ease. A laxative prescribed. Next day she was sitting up, unconscious of ailment; external appearance much the same as yesterday; pulse good; no heat of skin. Salts. About 10 on the evening of the 22d she asked for supper, and was allowed some bread and milk.—During the night she had two stools; she felt faint and giddy with the last, and required assistance on returning to bed; she was now seized with vomiting, and with a very severe pain in the right temple; the sickness was most distressing, and when raised up, vomiting supervened; the matter vomited was tinged with blood; and it was also observed, that the gums were readily excited to bleed. This was followed by great languor and exhaustion, and excited alarm of her immediate dissolution. Subsequently symptoms of oppressed brain came on, and she died at 3 P. M. of the 23d.

*Dissection.*—The appearance of the surface of the body remained unchanged. The pericranium was covered with petechial spots, as was the dura mater; on removing the membrane, the effects of a large effusion of blood were exhibited. In the right temporal region, a firm coagulum floating in bloody serum had forced its way through the broken down brain into the ventricle. The pleura and the peritoneum were found, like the dura mater, studded throughout with the dark livid spots.

This case requires no comment. The patient had the able advice of Mr William Wood of Edinburgh, a gentleman of great practical acumen, and large experience. It is evident, however, from the history of the case, that the bad symptoms came on suddenly about twelve hours before the death of the patient, in consequence of the effusion of blood which was afterwards found in the brain, and when no human means could have averted the fatal



termination. How far a previous bleeding might have operated in preventing the cerebral effusion, it is difficult to determine; but I must own, that were such a case to occur in my practice, now that I have had the advantage of reading the result of that related above, I should feel little hesitation in opening a vein.

Another case of purpura hæmorrhagica was communicated by Dr. Fairbairn to the Medico-Chirurgical Society of Edinburgh, in the second volume of whose "Transactions" it will be found recorded, and from which the following brief extracts are made.

The subject of this case was J. Henderson, aged 24, of robust constitution and regular habits. On the 18th November, 1823, Dr. Fairbairn found him complaining of deep-seated pain in the left breast, aggravated by frequent fits of coughing, and by a full inspiration; breathing hurried and laborious, with a distressing sensation of suffocation in the horizontal posture; countenance flushed and anxious. A copious discharge of dark venous blood oozed from the mucous membrane of the mouth, and a portion was also apparently expectorated from the lungs. Numerous petechiæ and vibices were observed upon the arms, neck and trunk, but they were in greater number on the legs, varying in magnitude from a mere point to the size of a sixpence. There were also a few spots upon the forehead; some of the spots were of a bright red colour, others were purple or livid, and a few of a dirty yellow. In the mouth, similar spots occupied the gums, cheeks, tongue, and fauces; the tongue itself was covered with a dark fur; urine presented a grumous appearance; pulse 110, firm and sharp; increased heat; belly loose from a powder composed of jalap, which he had taken early in the morning.

The patient stated, that he had for several weeks previous to the attack experienced considerable depression of spirits, general lassitude and pains in his limbs, which were stiff and swollen at night. He also felt pains occasionally darting across his head and chest; had a tickling cough, irregular shivering, followed by flushes of heat and partial perspirations. About the 12th Nov. six days before Dr. F. saw him, he first observed his sputa tinged with blood, which afterwards gradually increased. On the 16th the discoloration of the skin made its appearance first on the legs, afterwards on his arms and trunk; it was only in the morning on which Dr. F. saw him that the dyspnœa, and other symptoms above described, came on. Bled to 26oz. from the arm, which occasioned threatening syncope, with alleviation of the breathing, oppression, and pain. No buffy coat on the blood, which, however, presented a colour resembling arterial, and coagulated slowly without separating any serum, the coagulum being somewhat soft and tremulous. Frequent doses of 15 drops of dil. sulph. acid. to be given in cold water.

19th. Passed a restless night with fearful dreams and startings; pectoral symptoms somewhat alleviated, though he still complained of a corded sensation across the lower part of his chest. Considerable oozing of blood from the mouth; urine grumous, and rather scanty; no stool; pulse 112, and sharp;



skin hot; tongue furred, and streaked with blood. Eighteen ounces of blood were taken from the same wound in the arm, which nearly produced syncope, the blood exhibiting the same appearance as formerly. An ounce of Epsom salts immediately. At 8 P. M. Dr. Fairbairn found that his patient had had three hours of refreshing sleep in the course of the afternoon, but there was no mitigation of the pain, dyspnœa, and corded sensation in the chest. One loose fetid stool from the salts; oozing of blood from the mouth diminished; urine grumous, but the quantity is increased; pulse from 115 to 120, sharp and wiry; tongue dry and furred; skin rather moist. An ounce of castor-oil.

20th. Had some intervals of sleep during the night, but awoke in great alarm; experienced darting pains in the head occasionally, with slight delirium; frequent hiccup; pectoral symptoms the same; very little discharge of blood from the mouth; petechiæ more numerous, especially on the inferior extremities; had two stools resembling pitch; urine scanty and grumous; tongue dry and furred. Blood to the amount of  $\text{℥xxx}$ . was drawn, which produced syncope; buffy coat now apparent. A little wine and water, and beef-tea occasionally till the state of collapse be removed, and subsequently decoct. cinchon. to be given in repeated doses.

4 P. M. Had some intervals of sleep since the bleeding; is perfectly sensible, though he cannot articulate distinctly; pulse small and irregular; skin covered with a cold sweat. The decoction had not been given as directed. Wine and beef-tea to be continued.

At midnight Dr. Fairbairn found him in a comatose state, insensible to surrounding objects; the breathing laborious, with frequent heavy moaning, and he expired on the morning of the 21st, being the sixth day from the appearance of the petechiæ.

The appearances on dissection in this case will be found at page 566.

The following is extracted from Dr. J. S. Combe's case of purpura hæmorrhagica, detailed in the 17th vol. of the Edinburgh Medical and Surgical Journal, (page 83.)

19th Sept. 1820. Edward Canny, *Æt.* 10. Skin universally covered with petechiæ of a dark brown, almost black colour, varying in size from that of a pin-head to one-third of an inch in diameter, of form nearly circular, but, on the lower extremities, less distinctly circumscribed, and pale. The tongue, gums, and fauces, as far as can be seen, are studded with spots, but not so thickly as on the outer surface. There is a constant and pretty copious discharge of *thin* pale blood from the mouth and nostrils. The petechiæ on the tongue bleed freely when touched. Pulse 116, small, and rather sharp; skin hot; tongue white; breathing hurried, but he is able to draw a full inspiration. Appetite not affected; very thirsty; has severe pains in head and legs; very weak.

The spots were first observed two days ago in the morning, and on the evening of the same day blood began to issue from his mouth; he passed a stool, in which bloody dots were perceived—ordered a brisk purgative, and 10 drops of acid. sulph. dil. aromat. thrice a-day.

20th. Petechiæ present various shades of colour; blood oozing freely; pulse 120, small; had one stool, very fetid; skin hot; appetite good; urine scanty, very thick.—Rep. pulv. purg. et cont. acid. sulph. dil.

22d. A number of the spots have run into large vibices; discharge of blood equally copious, and much attenuated; pulse 120, fuller. Vomited a little blood twice; complains of sickness on raising his head; severe pain in the head; bowels freely open; stools dark-coloured, fetid; urine said to be high-coloured and sparing in quantity.—Habt. iterum pulv. purg. et sumat, pulv. chinç. gra. x. cum acid. sulph dil. gtt. viij. quarta quaque hora. Let him have an ounce of port wine every five hours.

23d. Slept ill; pain in forehead; nausea, and occasional retching; great debility. Pulse 110, small; petechiæ and hæmorrhage as before; bowels freely opened; urine scanty, turbid, and depositing a copious sediment; body emits a most offensive fetor.—Cont. omnia.

24th. He is in an alarming state; oppressed with nausea; vomits on the exertion. Has not taken his medicines; blood flowing more copiously from mouth; petechiæ have gone into large clusters on forehead, arms, and legs. Pulse 120, hard; violent pain in the head; skin hot in the trunk, but cold on the extremities. Eight ounces of blood abstracted from external jugular vein. He became faint, and vomited, and the pulse softer and fuller. The blood flowed in a small stream, and was of a very pale colour liker the washings of flesh than common blood; coagulated slowly, without any separation of serum, and shewed no buffy coat.—Ordered a purgative,—discontinue the other medicines. On visiting him eight hours after, he was rather better; sickness much abated, and no vomiting. Pulse 110, soft; head-ache easier; bowels opened three times; stools more natural in appearance. There has been a copious flow of pale, limpid urine; the wound in the vein had not closed, from which he lost about 3iiss more of blood.

25th. 8 A. M. Dr. Combe was called in great haste to stop the bleeding from the jugular. The patient's clothes and bed clothes were quite soaked with blood; it was paler and even more attenuated. Caustic applied to the wound. In other respects decidedly better; voice stronger; countenance more animated; head-ache relieved; no nausea or vomiting; urine very turbid. Ordered to be kept quiet, and to have any diet he chose, but no spirits. In the evening no blood had been discharged for the last two hours, either from wound or mouth. Habt. tinct. opii gtt. xx. h. s. et pulv. jalap, gr. xii. cras mane.

26th. Lost about 3i of blood from the wound during the night. Slept well; headache very slight; pulse 120, soft. No discharge of blood from nose or mouth; petechiæ fainter and more diffused. Bowels freely opened; stools natural; urine clear, and of a pale yellow colour.

27th. Convalescent. From this time he went on doing well, and the spots having altogether disappeared, he was discharged on the 7th October."

*Causes of purpura.*—According to Bateman, "the causes of this disease are by no means clearly ascertained, nor its pathology well understood." Seven

teen years have now elapsed since this statement was printed, and although many cases have since occurred, and several have been minutely recorded with the appearances found on dissection, we are still perfectly ignorant both as to its causes and pathology. It has taken place in individuals who were strong, enjoying good health, breathing a pure country air, with all the necessities and comforts of life around them; and it has likewise attacked those of delicate habit, living in crowded situations, on poor diet, and subject to distress of mind; and it has also occurred in others who were left in a state of debility by previous diseases, some of an acute, others of a chronic nature.

In most of the cases which have been recorded, there has been severe pain or oppression in the chest, and in some, in the head. In two cases, mentioned by Dr. Parry in 5th vol. Ed. Med. and Surg. Journal, the blood was very much buffed, the proportion of crassamentum to that of serum was uncommonly great. In Dr. Fairbairn's case, three bleedings were had recourse to the first to twenty-six ounces, the second to eighteen, and the third to twenty; there was no buff on the two first, the blood was red like arterial, coagulated slowly, and separated no serum; but on the third bleeding, the blood showed a buffy coat. In Dr. Johnson's case, only a part of the blood drawn at the second bleeding exhibited a buffy surface.

In different cases the pulse has been variously described—as full;—70, full but not hard;—100, full and intermitting;—quick, soft, and small;—very quick and weak;—100 and small;—110, firm and sharp;—very hard and strong;—120 full. In almost all the cases the stools have been dark-coloured and fetid; some describe them as being of a dark-green colour; and others, as black as pitch.

*Appearances on dissection.*—Petechial marks have been discovered on the surface of all internal organs; vascular turgescence, sanguineous and serous effusions, have been observed in the head. The lungs have always been found diseased—congested in their substance, the air passages filled with bloody effusion, and the mucous membrane lining the tubes of a dark colour. In the abdomen the mucous surface of the stomach and intestines has been found vascular, and spotted with petechiæ; the liver tender and more or less gorged. In one case mentioned by Dr. Bateman, the spleen was found enormously enlarged; and in another instance there was a large morbid growth, consisting of a fleshy tumour with a hard cartilaginous nucleus, weighing about half a pound, found in the situation of the thymus gland, firmly attached to the sternum, clavicle, pericardium, and surrounding parts.

The following appearances were found in the case recorded by Dr. Fairbairn, thirty hours after death:—

“The petechial spots over the body exhibited nearly the same appearances as before death. The sides of the neck, and upper parts of the chest, were swollen and livid, and there was a feeling of crépitus, with considerable œdema over the trunk. On removing the integuments from the fore and lateral parts of the chest, the cellular and muscular textures were in some places injected with blood, and emphysematous.



"The thorax contained about a pound of a fluid resembling blood, of a very dark colour and viscid consistence.

"The lungs were somewhat collapsed, of a dark livid appearance, and contained a bloody serous fluid, which occupied all parts equally; there was much less of feeling of crepitous throughout their substance, and the spongy texture was less observable than natural. The bronchial tubes and trachea were filled with a similar fluid; and beneath the internal coat of the latter, there was a slight effusion of dark venous blood, which tinged the membrane of a deep purple shade. Between the folds of the anterior mediastinum, and of the pericardium, there was effused into the cellular texture a considerable quantity of very dark blood, mostly in a clotted state, amounting to several ounces by computation. The pericardium contained the usual quantity of lubricating fluid; the inner surface presented its natural smooth, glossy texture, but it had assumed anteriorly a deep or brownish red colour, from the effused blood between its layers shining through it. The heart appeared pale and flaccid; there was no blood in any of its cavities. Under its internal membrane, particularly towards the valves of both sides, but more copious in the left, there was a similar effusion as in the trachea, giving a deep livid colour to the surface of the heart, and tinging its substance to the depth of half a line or a line.

"The inside of the aorta presented an increased tint of redness, apparently from the same circumstances, without evident thickening, or change of texture.

"In the cavity of the abdomen, the floating viscera were of a dark leaden colour, and less vascular than natural.

"There were a few petechiæ on the intestines. In the ileum there was slight inflammation, extending for a couple of inches, where one portion of the bowel had passed within another.

"In the stomach, towards the pyloric extremity, its inner membrane was thickly studded with petechiæ; whereas that portion surrounding the cardia, for about three inches, was distinctly emphysematous.

"The liver was paler than usual, and somewhat softened, its peritoneal proper coat was very easily peeled off; from its internal surface a bloody serous fluid could be squeezed out. The spleen was of full size, and softer than usual; and when torn, effused a quantity of dark-coloured matter, of a semi-fluid consistency.

"The right kidney seemed softer than natural; there was an effusion of blood under the internal membrane lining its pelvis, similar to that on the inside of the heart. The left appeared peculiarly blanched, and was also soft; but there was here no effusion.

"The bladder was pale and contracted, containing a few ounces of the same turbid coloured urine as he had been lately passing.

"On removing the scalp there were two large ecchymoses, two on each side, over the superior attachments of the temporal muscles. The brain with



its membranes, appeared quite healthy ; there might be about an ounce or so of clear serum in the ventricles, and at the base of the brain.

"In the course of dissection it was remarked, that there was a full proportion of adipose substance in every part of the body."

*Pathology of purpura.*—After relating two cases of purpura in the 5th vol. of the Ed. Med. Journal, the one occurring in a lady about 50, the other in a colonel of the army, who had been rather a free liver, Dr. Parry observes: "These cases strengthen an opinion which I more than twenty years ago maintained, and which a large subsequent experience has tended to confirm,—that in various diseases, among which may be reckoned inflammations, profluvia, hæmorrhages, dropsies, exanthemata, and other cutaneous eruptions, and even the generality of nervous affections, there is one circumstance in common which is an over-distension of certain blood-vessels, arising probably from their relative want of tone, or the due contraction of their muscular fibres."

Dr. Duncan Jun. in the 72d Number of the Edinburgh Journal, conceives that this disease may probably arise from the following circumstances:

"1st. Increased tenuity of blood, allowing it to escape from the superficial extremities of the minute arteries.

"2d. Dilatation of the mouths of those arteries allowing natural blood to escape.

"3d. Tenderness of the coats of the minute vessels which give way from the ordinary impetus of the blood.

"4th. Increased impetus of the blood rupturing healthy vessels.

"5th. Obstructions in the vessels causing rupture, with natural impetus, and without increased tenderness.

"6th. Two or more of these causes may act simultaneously or successively."

Mr. Plumbe thinks that Dr. Duncan's third conjecture is unquestionably correct as regards the formation of cutaneous spots of purpura. "That this tenderness is the result of deficient nourishment in the superficial vessels is perhaps equally clear; and it may fairly be suspected that such deficiency is consequent on the congestion in the hepatic and gastric circulation.

My own experience in this disease has been very limited, but after a careful review of the whole subject, I cannot subscribe to Mr. Plumbe's opinion, for the two following reasons.—1. If the disease had any thing to do with tenderness of the vessels, the consequence of deficient nourishment, it would be of far more frequent occurrence, whereas it is avowedly rare. 2. It is my impression that the state of the lungs in all stages of the disease, and more particularly in the early stages, has been hitherto quite overlooked. In one rapidly acute case which I was called to see, and which terminated fatally, the *râle crepitant* was heard in some parts of the chest, and the *râle muceux* in others. Although I have not been able to determine the true pathology of the disease, I think it possible that it may be owing to general functional derangement of many

organs, which at last produces a great change upon the blood; and that it may be owing probably to disease primarily seated in the lungs.

It is pretty generally admitted, that there is considerable analogy between the purpurous spots and the petechial which sometimes take place in fevers in which there are also occasional discharges of blood from various organs and I can state with the utmost confidence, that since my attention became directed to the investigation of the probable causes of petechiæ, I have not in one instance failed in detecting disease of the lungs, and particularly of the the mucous membrane, by auscultation, and that the observations so made have been confirmed upon examination after death.

*Treatment of purpura.*—Under the mystery which at present involves the nature and seat of the purpura hæmorrhagica, it is impossible to enter upon this part of the subject without a feeling of embarrassment. Dr. Parry and others have, from certain notions, strongly supported venæsection, while it has been condemned by some practitioners, whose opinions are entitled to at least equal respect. Dr. Willan is one of those who recommended “a generous diet, the use of wine, Peruvian bark, and acids.” There is one point, however, on which almost all practitioners agree, viz. the advantage of keeping up a free discharge from the bowels.

It is strongly impressed upon my mind, from a review of the cases, that there are some instances, like those recorded by Dr. Parry, Dr. E. Gairdner, and Dr. Combe, in which the patient’s only hope of safety depends upon venæsection; and that there are other instances, as those probably from which Dr. Willan drew his practical conclusions, which require an opposite mode of treatment. Daily experience also convinces me, that there is a third set of cases, in this as in almost all diseases, which requires a combination of bleeding and stimulants, and that it is not inconsistent with sound notions of pathology to bleed first, in order that we may be able to stimulate, and to stimulate for the purpose of enabling us to draw blood. Bleeding is always a dangerous remedy when employed late in severe diseases; and I fear considerable errors have happened, from drawing blood too late in purpura. It is only a year since I directed a vein to be opened in the arm of a girl affected with purpura; she died the same night; and in Dr. Fairbairn’s case, the man, although previously strong, never recovered from the loss of blood, and died in a few hours afterwards. The particulars of the case which I attended, should have been detailed, but I was not allowed an opportunity of examining the body of the patient after death, although every exertion was made to obtain it. The case was so similar to others already published, that it is of no value without a minute dissection-report.

When the operation of bleeding is performed, a larger orifice should not be made than is actually necessary, and the patient ought to be visited at short intervals, as subsequent hæmorrhage frequently occurs from the vein, and a good deal of difficulty is sometimes experienced in suppressing it. The

jugular ought not to be opened, unless in a case similar to Dr. Combe's, where no vein was found in the arm.

Acids, particularly the mineral, have been highly recommended; but I am disposed to place more confidence in the vegetable, and especially fresh lime-juice, not only taken internally, but applied externally. Turpentine has also been found useful by Dr. Nicholl, vide 17th vol. Edinburgh Medical and Surgical Journal.

From the beneficial effects produced by the acetate of lead in other discharges, I am induced to believe that it will be found serviceable in purpura hæmorrhagica.

Since writing the above, I was called to see a child, between two and three years of age, who lived in the same room with two other children affected with genuine small-pox. I found it feverish and lethargic, with constant vomiting; it had several petechial spots, and although it had gone through the process of vaccination when a few months old, I was apprehensive of small-pox. Laxative medicines were ordered.

Next day the child was found in the same state. The petechial spots had increased in number and size, and had spread over the trunk and extremities; the skin was hot, and the pulse quick and strong; nothing could be retained on the stomach; several attempts were made to give laxatives, but even small quantities of calomel were immediately vomited. Four leeches were applied to the instep.

On the third day the child was found convalescent; the leeches bled profusely; and although a tight bandage had been applied as directed, still the greatest difficulty was experienced in restraining the hæmorrhage. No petechial spots were now to be seen, but the foot was ecchymosed from the pressure of the bandage, on the removal of which blood again began to ooze from the leech-bites, which made it necessary to re-apply it. There had been no stool for three days, but as the irritability of the stomach had now subsided, laxative medicines were given, the bowels were moved before night, and so little debility was produced, that the child was walking about the room on the third day.

At the very moment I was engaged in completing this article, I was favoured with a letter from Dr. J. S. Combe, in answer to a communication from me on this subject, from which the following cases are extracted. They are very interesting, as in both instances the disease occurred in connection with general acute rheumatism:—

“A remarkable case of purpura was pointed out to me (says Dr. Combe) by the late Dr. Kellie. The subject was a brewer's servant, big and plethoric, who, on the fourth day of an attack of acute and general rheumatism, was found covered with bright petechial spots; he also discharged some blood from the bowels. Active depletion was had recourse to, and he made a quick recovery.” Dr. Combe further states that he “lately saw a robust girl aged 5, who had been attacked with a violent convulsive fit, and on recovery com-



plained of severe pain of head. In the course of a few hours I saw her, and as small-pox prevailed in the neighbourhood, her friends considered it as such, and pointed out some spots on the skin; they were undoubtedly petechial, and covered nearly the whole body, with smart fever and vomiting. On the 3d day the extensor muscles of the head were so painful that she could not bend it forward without much suffering; in a few hours this was followed by acute pain of all the larger joints. The spots on the 5th day were fainter in colour, and disappeared in a few days after; but eight days more elapsed before the rheumatic affection had subsided. She was treated actively by venæsection and purgatives."

EXUDATION OF BLOOD FROM THE SURFACE, WITHOUT ABRASION OF THE CUTICLE, COMMONLY CALLED BLOODY SWEAT.

PERHAPS nearly allied to purpura, is the transudation of blood from some parts of the surface of the body, which in all the cases I have heard of, has attacked females. It is a rare disease, and having a case under treatment at the time these pages are passing through the press, I shall state the appearances which presented themselves to my notice. It has been observed to be for the most part vicarious with the menstrual discharge, but it is not always so:—

Elizabeth H——, aged 19, employed as a house servant, stout, thick set, clumsy shaped, with large mammæ, short neck, and thick lips, plethoric constitution, presenting no external appearance of bad health, having an animated eye, and a good complexion, states, that she menstruated at 11 years of age without any difficulty, or constitutional distress, and continued always healthy till the month of September, 1829, exactly 11 months before I was consulted. At that time she became obstructed, and has since never felt well. To the best of her recollection, about three weeks after she should have seen a certain appearance, an oozing of blood took place from her cheeks, eye-lids, and eyes; it coagulated and hardened upon the surface, but was easily wiped off, leaving no unnatural appearance on the skin. Blood has since oozed not only from these parts, but also from the right breast, both fore-arms, and both ancles. When the discharge takes place from the ancles, it has never at the same time oozed from any other part of the body; and only twice has it been discharged from the cheeks, eyes, right breast, and fore-arms simultaneously,—generally it comes from one place only. Once the discharge flowed from the right ear, to the amount of about two table-spoons full, which is the quantity for the most part discharged at each attack; it has never exceeded that, but sometimes it only amounts to about a tea-spoon full. She sometimes passes a day without any discharge, but never two, since it first appeared last year, and she has generally three attacks during the twenty-four hours; they occur when she is working or moving about, but have never taken place when quiet in bed. She is aware when the oozing is about to occur, by a feeling of weakness and faintness, but never experiences shivering at such times.



As soon as the discharge commences, she is affected with giddiness, and, if walking, reels about like a person intoxicated; she is equally affected however small in quantity the discharge may be. Hitherto it has always ceased spontaneously, when she becomes for the most part very faint and drowsy.

Two or three days before I was consulted, she was bled to the amount of 25 ounces; the bandage subsequently became loose, and she lost 3 ounces more; she had also taken several doses of powerful laxatives, but, as she thinks, without benefit. She was brought to my own house for the first time in the afternoon of the 6th August 1830, and was desired to return during the period of an attack, which happened in about an hour afterwards; and I had an opportunity of seeing her during a slight discharge from the left cheek. She was exceedingly giddy and faint, and staggered very much in her gait; she felt so ill on the road, as to be compelled to solicit assistance from a person who was passing, who brought her to my door. The pulse was strong and full, beating 82; heat natural; the exudation from the cheek seemed to take place from every pore; as it oozed out, it collected into drops, and ran down; was of a red colour, looked like thin blood, and immediately hardened upon the surface; upon a white handkerchief it left a stain much fainter than pure blood, and perhaps more like what would have been caused by bloody serum; and she stated, that when the discharge drops upon the floor, it leaves a mark like blood, unless immediately wiped off. In a quarter of an hour, the giddiness went off, but left a degree of faintness, readily relieved by a glass of sherry, which did not produce any return of the exudation. She was now observed to be drowsy; the pulse had lost much of its fullness, but was still far from being weak, and it beat 80 in the minute. In about 5 minutes the drowsiness went off, and in a short time she felt so well as to be able to return home, and made a promise to collect some of the discharge in a tea-cup for examination. She further stated, that there is acute pain in the part from which the blood oozes, and when the discharge takes place from the eye-lids, a severe pain is experienced in the eye, increased on pressure. The breasts are tender to the touch, particularly the right breast.

In a few days afterwards, about 2 ounces of a sanguineous-looking fluid, which had been discharged from her left cheek and eye, were brought to me; it resembled blood mixed with serum.

## PART VIII.

---

DISEASES OF THE URINARY AND GENITAL ORGANS



## CHAP. I.

### INFLAMMATION OF THE URETHRA, BLADDER AND KIDNEYS.

---

#### INFLAMMATION OF THE URETHRA.

UNDER this head I shall treat of gonorrhœa, for although inflammation of the mucous membrane of the urethra may be produced by external injuries and other causes, yet this is rare in comparison to the disease produced by impure contact.

Gonorrhœa, (known also by the term blenorrhœa,) is an inflammatory affection of the mucous membrane of the urethra, the consequence of impure coition, and of which there are a great many varieties. The symptoms vary according to the extent and intensity of the inflammation, the constitution of the patient, and perhaps also the condition of the matter applied. A disease resembling gonorrhœa, may, it is said, be produced by inflammatory action extending from the kidneys and bladder—by calculi, highly acrid urine, excessive indulgence in sexual intercourse, long continued abuse of spirituous liquors, the action of cantharides on the system, and the incautious introduction of instruments.

*Symptoms and course of gonorrhœa.*—A short time after impure connection, a sense of titillation is experienced in the urethra, which soon amounts to itching, and is attended with frequent desire to make water. There is a feeling as if some urine were still left in the urethra, and a consequent effort is made to discharge it; the orifice is now observed to be red and swollen, and perhaps a small quantity of discharge is seen. By and by the desire to make water is more frequently renewed, and on each occasion the passage of the urine becomes more and more painful, sometimes almost intolerable, while the stream becomes smaller, notwithstanding the increased impulse given by the patient in bearing down. A pretty copious discharge of matter soon takes place from the urethra, which augments for some days, becomes thicker, puriform in appearance, and yellowish in colour; but when the inflammation is intense, it is greenish, and sometimes tinged with blood. It is denied that the matter is pus; we shall, however, commit no error if we consider it as a



puriform fluid, analagous to that which is discharged from the inflamed surface of other mucous membranes. The glans and prepuce frequently become swollen, and although the swelling of the prepuce is generally owing to œdema, yet it is sometimes occasioned by the extension of inflammation from the glans. Often during the course of this disease there are excessively painful erections, particularly during the night, the penis being sometimes bent one way, sometimes another, which condition is termed *chordee*. This disease generally goes on increasing in violence to the seventh, and sometimes even to the fourteenth day, and I have known the acute stage to continue even to the thirtieth. The decline of the acute stage is marked by the diminution of the *ardor urinæ*, and the inflammation at the *meatus*; still, however, the discharge of puriform fluid may continue considerable under the chronic form of inflammation. Every act of sexual indulgence, the use of ardent spirits, errors of diet, the application of cold, and inattention to the bowels, frequently reproduce acute inflammatory action, by which means the disease may be prolonged for a considerable length of time.

This is a description of the disease as it usually occurs. Sometimes, however, it is seen in a much milder form, so much so as to give the patient little trouble, and occasionally appears to undergo a spontaneous cure; but there is a far more severe form of this affection, in which the pain, and probably the inflammation, extend throughout the whole of the urethra, affecting in some cases even the bladder, and occasioning pain in the loins; the calibre of the canal is very much diminished in consequence of the swollen state of its mucous membrane, and notwithstanding all the efforts which the patient can exert, the urine flows drop by drop, accompanied by most excruciating pain, and *chordee* is frequent and distressing. In the worst cases Cowper's glands and the prostate partake of the inflammation, when a sense of heat, weight, and fullness are felt in the perinæum, generally accompanied by dysuria and tenesmus, which more frequently, however, occur when the disease spreads to the neck of the bladder. This state ends sometimes in abscesses, fistulas, and permanent disease of the prostate. But a more frequent termination of gonorrhœa is stricture of the urethra, produced by a permanent thickening of the mucous membrane, or by an extension of the inflammation to the cellular tissue surrounding that part of the urethra most intensely affected. During the course of gonorrhœa, even when very slight, inflammation of the testes occasionally takes place, and also of the glands in the groin; and sometimes an herpetic eruption is produced upon the glans or prepuce, probably from the acrid nature of the matter.

The term *gleet* is used to express the existence of a discharge from the urethra, the consequence of a diseased condition in which the mucous membrane is left after acute inflammation. This discharge is attributed to chronic inflammatory action; it comes and goes, varies in appearance between serum and pus, but for the most part is muco-purulent. The least error in diet, the use of spirits, wines, acids, and peppers, is followed by frequent desire to

make water, some ardor urinæ, and increased discharge of matter ; sometimes these symptoms exist to such a degree as to make the patient himself believe that it is a fresh attack. This state increases year after year, till at last a permanent stricture is formed. Loss of health is often the consequence of disturbed nights, produced by pains in the lower extremities, and by the patient being obliged to rise many times out of bed to empty the bladder, perhaps to void only an ounce of urine. Thickening of the bladder follows, with disease of the prostate, and perhaps also of the kidneys.

*Symptoms of gonorrhœa in females.*—The chief differences produced by this disease in the male and female are the following. In the latter, the inflammatory action sometimes affects the mucous membrane of the vagina ; and I have seen several cases where there was reason to believe that the lining membrane of the uterus also became involved, giving rise to *leucorrhœa* and *menorrhagia* in their worst forms. From the small extent of the urethra in the female, which does not exceed an inch and a half in length, and the simplicity of its structure, the symptoms upon the whole are not so distressing at the time as in the male, but the disease often leaves a severe form of prurigo, affecting the labia, the nymphæ, and the clitoris.

I shall not stop to enquire whether this disease is, or is not connected with syphilis, or whether it ever had a syphilitic origin.

*Appearances of the urethra when affected with gonorrhœa.*—Few opportunities of examining the state of the urethra in this disease present themselves. Sir Astley Cooper, however, had once such an opportunity in a criminal who had gonorrhœa at the time of his execution. “The inflammation had extended down to the bulb of the urethra ; for an inch or an inch and a half down the urethra was exceedingly red, and there was some effusion of matter on the internal surface ; the urethra was also red at the bulb, but not of so deep a colour. The inflammation therefore, (says he,) is not always confined to an inch, or an inch and a half down the urethra, but often extends over the bulb, and in this way produces strictures.” In the case above alluded to, the gonorrhœal inflammation had extended seven inches down the urethra ; Sir Astley Cooper thinks the inflammation to be of the erysipelatous kind, and that ulceration does occasionally take place in the mucous follicles, but never in the urethra itself ; if that were the case, the mucous membrane would more frequently give way. (Vide Lectures, p. 462.)

*Treatment of gonorrhœa.*—This is in many cases, a very intractable disease, and there is no telling where it will end. I have more frequently been annoyed and disgusted in conducting the treatment of gonorrhœa than of any other affection. We are often not consulted till the disease is far advanced, and great difficulty is experienced in keeping this class of patients under a proper degree of restraint.

There are two methods of treatment strongly recommended. The one is to endeavor to alter the action of the part immediately, even during the acute stage, by means of stimulating injections, or the action of cubebs, a remedy

which was introduced into this country a few years ago from the island of Java. There can be no doubt that cubebs is a very powerful, and in many instances an excellent remedy; but bad consequences, it cannot be denied, are often produced both by it and the stimulating injection when indiscriminately used. There appears to be a time at the very commencement of the first stage of the inflammation, when either remedy may prove beneficial, but this must be during the first hours, before the inflammation has extended, and previous to the formation of matter; but we seldom have such an opportunity. Were a medical man himself the patient, he might indeed apply these remedies at once, and successfully, particularly if his habit of body were in a good state at the time. Cures appear to have been effected when the first stage had been further advanced, but perhaps for one such event, there have been fifty failures, out of which several cases might be produced, where more violent inflammation and suppuration of the parts and even inflammation of the testes succeeded. Therefore, generally speaking, it is not in the first stage that these remedies are found to be so advantageous as in the chronic.

The other plan I shall give in the words represented to have been used by Sir Astley Cooper in his Lectures:—"When the patient applies to you for his first clap, there will be generally a great deal of inflammation, and I advise you to give the sulphate of magnesia, with the infusion of senna. An ounce of the sulphate of magnesia may be mixed with six ounces of the infusion of senna, and three table-spoonsful given two or three times a-day, so as to purge the patient very actively. You may afterwards give the submuriatic hydrargyri with extract of colocynth, but merely as a purge; for if it were to act as a mercurial, I would not give it at all. There is no necessity for giving calomel, unless you wish it to act on the liver, as well as on the intestinal canal. Having purged the patient pretty freely, you will direct him to take diluting drinks of which he can hardly take too much. Two drachms of the carbonate of potash, or the sub-carbonate of soda, should be taken in a quart of some diluting drink in the course of a day: capillaire, or tea, will answer this purpose very well: some advise the gum of acacia, but whether it does any good or not, I do not know. I have found the liquor calcis a very excellent diluent in this disease. Soda water is often useful, but it must be ascertained whether it produces irritability of the bladder; for, in some persons, it increases irritability. If it increases very much the inclination to make water, it should not be persisted in; if it does not produce this effect, it is a very excellent diluent. The penis should be suffered to hang for a considerable time in warm water, which will relieve the inflammation, and produce nearly all the good of a warm bath. When the ardor urinæ and pain from chordee are very severe, twenty drops of the liquor potassæ, with from three to five grains of the extract of conium, in the *mistura camphorata*, may be given with considerable advantage. This is the plan which you should pursue during the first week. You may then apply lint, dipped in the liquor plumbi subacetatis dilutus, to the part. Do not use an



injection in the first instance, but pursue the plan I have pointed out to you during the first ten days."

Having frequently tried this plan of treatment without success, I had recourse to that which shall now be described, and I can recommend it strongly from its superior success.

*1st stage.*—If the inflammation be severe and extensive, with much *ardor urinæ*, swelling of the penis, and *chordee*, I open a vein, particularly if the patient be young and robust, and if the pulse be full or hard, and in this manner make a speedy impression upon the inflammation. The bleeding is to be followed by the use of saline purgatives, given after the exhibition of a moderate dose of calomel combined with any other laxative in common use; the antiphlogistic regimen; and perhaps also a solution of tartar-emetic. By these means, the severity of the inflammation will in general be quickly subdued, and the first stage shortened. After this I have often seen the greatest advantage from the immediate employment of cubebs, the balsam of copaiva, as well as from astringent injections thrown into the urethra. In some cases where bleeding is inadmissible, and where the inflammation produces pain in the perinæum, much benefit may be derived from the repeated application of a dozen or two of leeches. *Ardor urinæ*, *dysuria*, and *chordee*, are most effectually mitigated, in cases not requiring the active treatment above recommended, by lint-seed tea containing a small proportion of the nitrate of potass, as also by anodyne injections thrown into the rectum. A very useful remedy is to be found in pills composed of equal parts of camphor and hyosciamus, of which two may be taken every second, third, or fourth hour.

The tinctures of muriate of iron and iodine have been much praised.

*2d stage.*—It frequently happens, however, that we are not consulted till the second or chronic stage has taken place. Even then, I have seen considerable advantage from the application of leeches to the perinæum, more particularly in old subjects, and when the inflammation had extended far down the urethra. It is in this stage that the effects of cubebs, balsam of copaiva, and astringent injections are so beneficial, provided there be no tendency to stricture, to ascertain which, a bougie is to be introduced; and if one should be discovered, it will be in vain to use any remedy, till it be removed. The usual injections employed, are those composed of the acetate of lead, or sulphate of zinc, at first in about the proportion of a grain to the ounce of water. Sometimes these substances are united, forming a solution of the acetate of zinc, the sulphate of lead being precipitated; the solution should be carefully strained before it is used. An infusion of green tea is also often serviceable.

In treating the disease in females, the same principles are applicable; and when injections are ordered care should be taken that they be not thrown into the vagina only, which generally happens unless instructions are given where to find the urethra. It has been mentioned already, that a troublesome prurigo sometimes affects the labia, nymphæ, and clitoris, for the cure of which,



it is necessary to pay great attention to the bowels, to use ablutions of the parts every second or third hour, with astringent washes; and in obstinate cases, the application of a solution of the nitrate of silver is necessary. Confinement to the horizontal posture, and even general bleeding, are called for, particularly when the parts are inflamed and much swollen.

#### INFLAMMATION OF THE MUCOUS MEMBRANE OF THE BLADDER.

This disease most frequently affects the neck of the bladder, and is generally recognized by pain and swelling in the hypogastric region, the pain being increased by pressure, with a sense of internal heat and tension, frequent desire to make water, and extreme difficulty in passing a few drops, notwithstanding violent bearing down efforts; occasionally indeed there is complete retention. There are also considerable pain and burning heat in the urethra, sometimes, however, only at its orifice, with a sense of itching in its course. The bladder sometimes greatly becomes distended, and indeed, it may be mentioned, that the distention is sometimes the cause of the inflammatory action. If the disease is not soon mitigated, tenesmus, tympanitic distension of the abdomen, pains in the loins, and febrile symptoms take place.

*Causes of inflammation of the bladder.*—Individuals subject to gouty and cutaneous diseases, as well as those affected with dyspepsia, are liable to this complaint. The application of cold; the use and particularly the abuse of ardent spirits; the external or internal use of cantharides, and small doses of turpentine, together with acrid urine, are also occasional causes of this disease, particularly in individuals who are afflicted with strictures in the urethra.

There is also a chronic form of inflammation of the bladder, which occurs in old people, and is often occasioned by stone, which terminates in thickening, and even ulceration of the mucous membrane, with very considerable hypertrophy of the muscular structure of the organ; and it is in these cases that the discharge of a large quantity of mucous takes place.

This disease terminates by what is called resolution, and by becoming chronic, when pus is sometimes discharged. Gangrene is exceedingly rare; peritonitis is a more frequent occurrence, owing more to distension of the bladder, than to the extension of the inflammation from one tissue to the other.

*Treatment of inflammation of the bladder.*—Bleeding, general and local; the hip-bath, gentle laxatives frequently repeated, emollient and mucilaginous diluents, and opiates, particularly *per anum*, ought to be had recourse to, according to the severity of the disease and sufferings of the patient, but the introduction of the catheter into the bladder must be regarded as a principal remedy, and ought to be had recourse to as soon as possible. This is not only serviceable by drawing off perhaps a large collection of water, thereby relieving the distension, but sometimes by removing a small quantity of acrid, high-coloured urine, which mitigates the patient's sufferings immediately. In this case also, the employment of camphor and hyosciamus will be benefi-

cial; and when the disease becomes chronic, I have seen cubebs and copaiva useful. In instances where we have good evidence that acrid urine is the cause of the disease, it will be found serviceable to inject tepid water into the bladder, provided it is not allowed to be retained; this means is also recommended when the inflammation becomes chronic. Rubefacients are serviceable, both in acute and chronic inflammations of the bladder. Tincture of cantharides given internally, and small doses of turpentine, are beneficial in some cases, but are only to be used in chronic forms of the complaint of long standing, when we want to rouse a little action. It need scarcely be stated, that after there is evidence of stone in the bladder, the first opportunity should be seized, which the local and general symptoms will admit, to extract it by the usual surgical operation.

#### INFLAMMATION OF THE KIDNEYS.

THE term nephritis has been applied to this disease, the causes of which are much the same as those of inflammation of the bladder. Gouty subjects, and others who are frequently troubled with rheumatism and lumbago, and also with eruptions, are often affected with nephritic complaints, as well as those who are subject to dyspepsia. The abuse of spirituous liquors, the too frequent use of diuretics, the employment of cantharides, sudden changes of temperature, the suppression of habitual discharges, and the recession of eruptions, retention of urine, external injuries, irritation produced by the presence of a calculus in the kidney, and inflammation of the urethra and bladder, extending to the kidneys by continuity of surface, are all exciting causes of the disease.

*Symptoms of inflammation of the kidneys.*—This disease generally commences, like other inflammations, with rigors, followed by pain and fever, which vary in intensity. The pain is generally severe and lancinating, but sometimes is obtuse, with a sense of increased weight, which is felt in one or both lumbar regions; it often extends to the bladder, the penis, the groins, and scrotum, and sometimes even to the thighs; and is increased by pressure and motion, as well as by taking in a full breath, and efforts made at stool. In slighter cases, the patient complains only of a sensation of heat and weight, sometimes of gnawing constrictions in the loins. The urine is scanty, and passed drop by drop, of a red colour, and sometimes is entirely suppressed. Besides these symptoms, there are often a feeling of faintness, nausea, and bilious vomiting, borborygmus, oppression at the præcordia, hiccup, tympanic distension of the abdomen; occasionally there is diarrhœa with tenesmus; at other times the bowels are constipated, and numbness and retraction of the testicle on the affected side are complained of,—if both kidneys be affected, there is retraction on both sides. There is likewise fever, and the pulse is generally hard. Sometimes the skin is covered with perspiration having a urinous smell; at other times it is dry and hot.

These symptoms are often variously combined, and are sometimes modified by the occurrence of great restlessness, headache, and the passage of bloody

urine, which, however, on some occasions, is clear and limpid, although it may subsequently deposite a white sediment.

This disease is rarely fatal, although the bodily pain is perhaps fully as intense as in any other malady which is the product of inflammation, and accompanied by fever. It rarely terminates in extensive suppuration in the substance of the kidney, but I have sometimes seen small abscesses in individuals who died of the ordinary fevers of this country, which were treated as typhus fevers, and where on suspicion was entertained during life that any local disease existed. Sometimes the matter escapes and finds its way into the pelvis of the kidney, and from thence into the bladder; on other occasions, the inflammation seems to be confined to the lining membrane of the pelvis, which is found greatly enlarged and distended with pus, instances of which have fallen under my observation within the last few years; these were also treated as idiopathic fevers of the typhoid type. Cases are on record, where the suppuration has been so extensive, that the substance of the kidney has been entirely destroyed. It is rare for the pus to escape into the cavity of the abdomen, and equally rare for the abscess to point externally, but instances have been known where the matter has found its way into the colon, one case of which I have seen. It is said that gangrene occasionally ensues, but such a termination must be extremely rare; I have seen the natural progress towards decay mistaken for gangrene. When suppuration does take place, the more violent symptoms subside; a throbbing sensation, and a sense of weight, are said to occur, with alternate chills, slight flushes of heat, and profuse sweating.

In chronic inflammation, induration of the kidney is produced, and sometimes it is completely disorganized. This diseased condition of the kidneys shall be fully illustrated in a subsequent part of this work, in the chapter on dropsy.

*Treatment of inflammation of the kidneys.*—Antiphlogistic means, such as are recommended for the cure of other inflammations, are to be had recourse to. Copious venæsection, repeated according to circumstances, and local bleeding, which is better effected in this particular disease by cupping the loins, than by applying leeches, are highly necessary. Fomentations, applied as hot as they can be borne to the loins, are peculiarly soothing, fully more so than the general warm bath, which, however, is not to be neglected; gentle laxatives, particularly of the saline kind, are to be frequently repeated; lint-seed tea, or any other mucilaginous drink containing small proportions of the nitrate of potash, is to be taken, but diuretics are not to be exhibited until the acute stage is subdued. Large injections of tepid water *per anum* are often found to produce temporary relief, and should therefore be frequently used, but it will be well to employ Read's syringe, by which a larger quantity can be more conveniently introduced into the bowel, than by any other means. Rubefacients, particularly mustard plasters, applied to the lumbar region, are found beneficial, but are by no means to be used till towards the end of the acute stage.



## CHAP. II.

### CALCULUS IN THE KIDNEYS,—BLADDER,—AND OTHER PARTS OF THE URINARY PASSAGES.

---

THE urine is one of the most complicated fluids secreted by animals ; it is composed of acids, alkalies, calcareous earth, and other substances hereafter to be noticed.

The substances hitherto discovered in urinary calculi are lithic, sometimes called uric acid—phosphate of lime—ammoniac-magnesian phosphate—oxalate of lime,—cystic oxide, with a variable proportion of animal matter cementing their ingredients. According to the best authorities, it would appear that these substances seldom exist singly, yet some of them generally prevail in a sufficient degree to impart to each stone a peculiar character. Dr. Marcet has given the following classification :

1. Lithic calculus ;—2. bone-earth calculus, principally consisting of phosphate of lime ;—3. the ammoniac-magnesian phosphate ;—4. the fusible calculus, consisting of a mixture of the two former ;—5. the mulberry calculus, or oxalate of lime ;—6. the cystic calculus, consisting of the substance called by Dr. Wollaston cystic oxide ;—7. the alternating calculus, or concretion, consisting of two or more different species, arranged in alternate layers ; 8. the compound calculus, the ingredients of which are so intimately mixed, as not to be separable without chemical analysis ;—9. calculus of the prostate gland.

1. *Lithic calculus*.—So called from the preponderance of lithic acid, which substance was first discovered by Scheele. This is a hard inodorous concretion of a brownish or fawn colour, sparingly soluble in water, but easily dissolved by solutions of either of the fixed alkalies. It is also soluble in nitric acid. When exposed to the action of the blow-pipe, it blackens, emits a peculiar animal smell, and gradually evaporates, leaving a little white alkaline ash.

2. *The bone-earth calculus, principally consisting of phosphate of lime*.—The existence of a urinary concretion, consisting entirely of phosphate of lime, was first pointed out by Dr. Wollaston, who gave the following description of its appearance : “ Its surface is generally of a pale brown, and so smooth as to appear polished ; when sawed through, it is found very regu-



larly laminated, and the laminæ in general adhere so slightly to each other, as to separate with ease into concentric crusts." When powdered, this calculus is very soluble either in the muriatic or nitric acids. Under the action of the blowpipe it first blackens, but soon becomes perfectly white.

Dr. Marcet thinks that calculi entirely composed of pure phosphate of lime are very rare.

3. *The triple calculus, or ammoniaco-magnesian phosphate.*—Dr. Wollaston also discovered this triple salt as a constituent of urinary concretions, although calculous masses consisting solely of this substance are perhaps never met with. Calculi in which the ammoniaco-magnesian phosphate prevails, are generally whiter and less compact than those of the former class. An ammoniacal smell is emitted under the blow-pipe, the fragment diminishes in size, and if the heat be strongly urged, an imperfect fusion takes place, leaving a phosphate of magnesia.

4. *The fusible calculus.*—With the exception of the lithic, this kind of calculus occurs more frequently than any of the others. It is also in general whiter, and more friable, sometimes resembling a mass of chalk. It likewise appears in the form of a spongy and very friable whitish mass, without a laminated structure.

5. *The mulberry calculus, or oxalate of lime.*—It was Dr. Wollaston who first discovered this substance in urinary calculi. Although named mulberry from its external resemblance to that fruit, yet we are assured by Dr. Marcet, that a number of calculi of this class occur, which, far from having the mulberry appearance, are remarkably smooth, and pale coloured; and it is conjectured, that the dark colour of the tuberculated calculi may arise from blood having been imbibed by them.

6. *The cystic oxide calculus.*—This calculus was first discovered by Dr. Wollaston, and resembles more nearly that of the triple phosphate of magnesia, than any other sort; but is more compact, has no distinct laminæ, and appears as one mass confusedly crystallized; it has a yellowish semi-transparency, and a peculiar glistening lustre, like that of a body having a high refractive density. The solvents of the cystic oxide are too numerous to be particularized here; but it may be mentioned that it is not soluble in water, alcohol, acetic, tartaric and citric acids, or saturated carbonate of ammonia.

7. *The compound calculus in distinct layers.*—Calculi of this description are frequently seen in practice, and shew lithic strata alternating with layers of oxalate of lime, or with its phosphate. Dr. Marcet has given a representation of a calculus, in which lithic acid forms the nucleus, pure phosphate of lime being next to this, and so on, the fusible crust at last enveloping the whole concretion.

8. *Compound calculus, with the ingredients intimately mixed.*—This kind is comparatively rare; but Dr. Marcet states, it may be sometimes recognized by its more or less irregular figure, and less determined colour, by being less distinctly, if at all stratified,—and by often possessing a considerable hard-

ness. When exposed to analytical processes, confused results are obtained, which soon proclaim its compound nature.

9. *Calculus formed in the prostate gland.*—Calculi formed in this situation often give rise to symptoms which are mistaken for the effects of stone in the bladder. According to Dr. Wollaston, they all consist of phosphate of lime, not distinctly stratified, and are tinged with the secretion of the prostate gland, the salt is in the neutral state, without a redundance of calcareous earth as in bones. Their external appearance is similar to that of the lithic calculi; but Dr. Marcet has shewn, of how much consequence it is in a practical point of view, to be able to detect the difference. For full information upon these points, and upon all others connected with the formation of urinary calculi, I must refer the reader to Dr. Marcet's excellent work on calculous disorders, published in 1819.

Besides these, Dr. Marcet describes two other kinds of calculi, the names of which I shall only mention:—1st, The Xanthic oxide, which makes an approach to the cystic calculus, but gives a bright lemon residuum on evaporating its nitric solution, which is not yielded by the cystic calculus. 2d, Fibrinous calculus, so called from its possessing properties similar to those of the fibrine of the blood, and supposed to be formed by a deposit from the blood.

#### CALCULUS IN THE KIDNEY.

*Symptoms.*—Long-continued obtuse pain is felt in the lumbar region, shooting downwards, and producing a numbness in the thigh of the affected side, with painful retraction of the testicle, increased on taking exercise. There is a frequent desire to make water, which is discharged in small quantity at a time and generally of a deep-red colour, often depositing a brick-coloured sandy sediment. A great many cases have been recorded, where calculi of considerable size have been lodged in the kidney, without producing much inconvenience to the patient, a remarkable instance of which is given by Dr. Marcet; the state of parts is well represented in his first plate, which shews the pelvis of a diseased kidney much enlarged, and distended by a number of calculi closely pressed against each other; other calculi are seen in the enlarged infundibula. The patient died under Dr. Marcet's care at Guy's Hospital, of hydrothorax, "without any symptom having occurred which could lead me to suppose that there was any disease in the urinary organs." There is also a remarkable preparation in my museum, taken from the body of a woman who died of what was considered to be typhus fever; the kidney was enlarged, of scirrhus hardness, the ureter was destroyed, and a large calculous mass was found in the substance of the kidney. Had the woman lived long enough, it would have been discharged by stool. It was in the left kidney, to which the descending colon was strongly attached; several ulcerations are to be seen through the intestinal tube, communicating with the calculus. The woman had been long slightly ailing, and there can be no doubt that the

febrile symptoms which occasioned her death, were produced by local irritation; she had been for some time affected with diarrhœa, and occasionally the stools were bloody.

We are told by Dr. Marcet, that when a calculus is lodged in the kidney, a suppuration and gradual wasting of the organ takes place, in which circumstances the disease is generally accompanied by a long-continued pain in the lumbar-region, and by a discharge of purulent urine, not unfrequently attended by copious hæmorrhage,

Some years ago, I extracted a stone, which weighed one ounce and 35 grains, from the bladder of a female, by dilating the urethra, which was effected by sponge-tents. The patient died some time afterwards from apoplexy, and on dissection, the arteries of the body were found generally ossified; one kidney was in a state of atrophy, its emulgent artery being very much diminished in size at its origin from the aorta by an ossific deposition. The other kidney was considerably enlarged, although its structure appeared to be sound; and another calculus, the size of a small bean, was found in the pelvis, about to enter the ureter, which was much dilated through its whole course, and appeared as if it had formerly given passage to the nucleus of the large stone which had been previously extracted. The symptoms under which this woman had laboured for a number of years, were not of so marked a character as to attract the attention of a great number of medical men in Edinburgh, who had seen her at different times. This perhaps may be fairly attributed to the combination of symptoms produced by the general disease in the coats of the arteries.

It would appear probable, that acute pain and great suffering are produced more frequently when a calculus is in its passage from the kidney through the ureter, than at any other time; and I believe it is generally remarked during the passage of a calculus, that the pain is excruciating, not only in the loins, but also in the testicle from its retraction; yet the pulse remains for the most part unaffected, which is a phenomenon also observed during the passage of gall-stones through the biliary ducts into the duodenum. In other respects, there is a close resemblance between the symptoms of stone, and those sometimes occasioned by inflammation of these parts, when no calculous concretion exists.

*Treatment of urinary calculus in the kidney, and during its passage from thence into the bladder.*—It has already been shewn, that calculi may exist in the kidney without giving rise to any very marked symptoms; nevertheless, when attending a patient complaining of dyspeptic symptoms, accompanied by pain in the lumbar region, it is our duty to examine the state and appearance of the urine. The remarks already made must be kept in recollection, and particularly that renal calculi are chiefly composed of lithic acid, the excess of which gives to the urine a red colour, and when there is any deposition on the sides of the vessel, it will be of a red or pinkish colour. Under such circumstances, the use of alkalies will be found very serviceable, and



more particularly Henry's calcined magnesia. The alkalies in common use are lime water, the sub-carbonates of soda and potash; and I frequently exhibit the liquor potassæ in milk. The warm bath, hot fomentations to the loins, and rubefacients, may be employed, and will frequently relieve the pain. Local bleeding by cupping may also be had recourse to when necessary. Opiates are serviceable in allaying pain, particularly when it is violent, and when suspicion is entertained of a calculus passing through the ureter; the dose must at that time be proportioned to the severity of the sufferings; indeed, general bleeding is then frequently necessary. Under both conditions, gentle laxatives are indispensable assisted by large tepid injections.

#### STONE IN THE BLADDER.

*Symptoms.*—A frequent desire to pass urine, an uneasy sensation in the glans, and pain in the region of the bladder, are the chief symptoms complained of. The uneasiness in the glans becomes at last very acute. The urine varies in appearance, depositing sometimes a red, at others a white sediment; there is often a considerable quantity of mucous, sometimes tinged with blood, produced no doubt by constant irritation, and inflammation of the mucous membrane of the bladder; the urine sometimes flows only drop by drop, with great straining, owing perhaps to the enlargement of the prostate gland, or to the stone being lodged in the neck of the bladder. Occasionally the urine flows in a full stream, but suddenly stops with violent pain, which is generally attributed to the stone pressing on the orifice. This inconvenience is frequently relieved by change of posture. Thus I have known several patients who were never able to make water, unless lying on one side; and instances are recorded by Sir James Earle, of patients who, "in order to evacuate their urine, were literally obliged to stand on the head almost in a vertical position."

The symptoms above enumerated are not always present, but come on at times in severe paroxysms, which are known by the term "fits of the stone;" these are occasionally produced and exasperated by exercise of any kind, but particularly by riding on horseback. Instances are recorded in which stones of considerable size have been found in the bladder after death, without having produced much, if any previous suffering; but in these cases they have generally been found contained in cysts.

On dissection of patients who have died with calculus, the bladder is generally seen more or less thickened, diminished in size, and the mucous membrane is also frequently found extensively diseased, sometimes ulcerated.

*Treatment of stone in the bladder.*—A stone in the bladder, if small, may pass through the urethra, and this is a frequent occurrence; but when large, the only prospect of curing the patient is by means of a surgical operation, which this is not the place to describe. Various chemical agents, some of acid, others of an alkaline nature, have been recommended to be thrown into the bladder, for the purpose of dissolving calculi; but as it has been already shewn that the composition of urinary calculi is various, and that each may



consist of different substances in distinct layers round a common nucleus, little benefit can be expected from their employment. Besides this objection, the introduction of such fluids must exasperate the patient's suffering in all cases by irritating the bladder, if used sufficiently concentrated to exert any solvent effect.

As palliatives,—general laxatives, tepid injections thrown into the rectum opiates, perfect rest, the warm bath, and attention to diet, will be found beneficial.

For further particulars respecting the treatment of stone in the bladder, and for many ingenious remarks concerning the operations of remedies, I must refer the reader to Dr. Marcet's work.

#### STONE IN THE URETHRA.

*Symptoms.*—At first this affection may be mistaken for stricture, but the impression will generally be removed by the introduction of a metallic bougie or catheter. But even if neither of these be used, the nature of the case is soon unequivocally announced by a partial or complete retention of urine, by acute pain in the situation of the calculus, by the hardness of its feel, and by subsequent inflammation, and tumefaction of the part.

This also is a case for the surgeon; but I may mention a plan, which prevails among quacks, of giving strong diuretics to produce a copious secretion of urine, with a view of expelling the stone by creating a deluge; but this is to be regarded as a rash and dangerous practice, which no sensible man would venture upon, because it might render the operation of puncturing the bladder unavoidable.

#### STONES EMBEDDED IN THE PROSTATE.

*Symptoms.*—These are very obscure; their detection is difficult, and there is no decisive diagnostic. It may be mentioned, however, that there is generally a difficulty in making water, with uneasiness at the neck of the bladder; when the catheter is introduced, an opportunity may be taken of making an examination *per rectum*, when the prostrate gland will be found enlarged; surgeons, however, cannot always expect to be so fortunate as Sir A. Cooper, who on one occasion felt the stone grate against the catheter; but it is necessary in all gravelly cases to make a very minute examination.

With respect to the occurrence of calculous disorders, it may be mentioned, that males are more liable than females,—that they chiefly affect the studious and sedentary,—and it is rare to see an instance of stone in warm climates.

## CHAP. III.

### SUPPRESSION OF URINE, RETENTION OF URINE, INCONTINENCE OF URINE.

---

#### SUPPRESSION OF URINE.

A PARTIAL and sometimes a total suppression of urine takes place in most cases of fever, and for the most part also in severe inflammation of various organs; and it has been already shewn to be a consequence of inflammation of the kidneys. But as the term is now used, I mean to express a suppression of urine from failure in the secreting powers of the kidneys, sometimes, though not generally, accompanied by violent suffering. Suppression of urine, however, leads sooner or later to very serious consequences, more particularly by producing a cerebral affection, which for the most part terminates fatally. It also appears to be connected with dropsies, of which I shall speak under the proper head. Suppression of urine generally occurs in people who are past the meridian of life, although there are many exceptions. All the patients seen by Sir Henry Hallford, before the publication of his paper in the 6th volume of the Medical Transactions, "were fat, corpulent men, between fifty and sixty years of age;" nevertheless, we sometimes meet with the disease in children. It is, I believe, most frequently observed to occur in gouty habits after the long-continued application of cold, or subsequent to the suppression of an eruption, or some habitual discharge. Dissection has proved, that it is often also the consequence of scirrhus, and other disorganizations of the kidneys themselves.

In the genuine disease, there is no desire to make water, but I have seen two cases where almost total suppression had continued, in one for months, in the other for some weeks, and in which a pretty constant desire to make water existed, it being only once in two or three days, however, that a small quantity not exceeding two or three table-spoonsful was evacuated, of such an acrid nature as to scald the urethra. There is neither pain nor tumefaction above the pubes denoting a full state of the bladder; but to determine the point, it is wiser to introduce a catheter, which at all events, has the effect of satisfying the patient. Nausea and constipation, and an occasional feeling of sinking, generally attend this complaint. The pulse and skin con-

tinue for some time natural, but the former is occasionally slower than usual, which always denotes danger.

In some cases, the symptoms are very distressing from the first, there being frequent and violent vomiting, hiccup, restlessness, and severe headache, with pain in the back. In the cases produced by disorganization of the kidney, it will be found, upon inquiry, that pain, and a sense of heat in the loins, have been much complained of previous to the suppression. It appears to me that a number of the cases of this disease, published by Dr. Abercrombie, in the 17th volume of the *Edinburgh Medical and Surgical Journal*, entitled "*Ischuria Renalis*," were really not cases of the disease, but of inflammation of other organs, attended, as is most frequently the case, with more or less suppression of urine; and I more particularly allude to three out of the five cases which that gentleman has recorded.

It has been very generally remarked, that there is great sympathy between the functions of the skin and the kidneys, for during warm weather, when there is a copious secretion from the skin, little urine is discharged; and in cold weather, when the determination to the skin is diminished, the urine is observed to be in larger quantity. In the disease now under consideration, there is sometimes profuse sweating, and in three of Sir Henry Hallford's cases, the perspiration was observed to have a strong urinous smell.

For the most part this disease is speedily fatal, and seems to be so by producing diseased action in the brain, terminating in coma and death. In other cases, a train of symptoms denoting inflammation of the brain occurs with paralysis; and the first instance in which I ever remarked the combination of rigidity of the flexor muscles and paralysis, was in a case of this kind.

Sir Henry Hallford states, in relating the history of one of his cases, that "the patient sat up in bed and conversed as usual, complaining of some nausea, but of nothing material in his own view; and I remember that his friends expressed their surprise that so much importance should be attached to so little apparent illness. The patient's pulse was somewhat slower than usual, and sometimes he was heavy and oppressed. I ventured to state, that if we should not succeed in making the kidneys act, the patient would soon become comatose, and would probably die the following night; for this was the course of the malady in every other instance which I had seen. It happened so; he died in thirty hours after this in a state of stupefaction." It must be observed, however, that the cases do not always terminate fatally, and that many run a much longer course before death takes place.

Three cases have fallen under my care in men far advanced in life, in two of which the suppression was almost complete for two or three weeks at a time, without giving rise to any troublesome train of symptoms, and for many days it was entirely suppressed; I believe they are both still alive, at least I know for a certainty that one is. Dr. Parr, in his *Dictionary* under the article "*Ischuria*," mentions a similar case, in which no urine was secreted for six weeks; and Dr. Laing, in 10th vol. *Edinburgh Medical and Surgical Jour-*

nal, has described a case in which there was a complete suppression of urine for nine days, and yet the patient got well.

Many years ago I saw a very interesting case, of which the following is a sketch.—A gentleman at 72, who had always enjoyed good health, with the exception of seven or eight severe attacks of gout, under which he had formerly laboured, was seized with a partial suppression of urine for 4 months, when it became almost entirely suppressed. His illness continued for 10 months, during which he fell off in flesh; his strength diminished; and his temper became very irritable. During the last four months of his life when the urine was almost totally suppressed, he complained frequently of headache, and weakness of one side of his body. His face and head were often observed to be flushed, particularly when irritated, and after meals. He had frequent desire to make water (probably owing to disease of the prostate, which was found after death,) but rendered only a table-spoonful or two once in two or three days; nevertheless he used to stand for an hour at a time with the chamber-pot in his hand, supposing that he was making water all the time; and he had also a notion that he was perspiring very freely, although there was never the least moisture upon his skin. During this time, and up to within a few days of his death, diuretic medicines, and saline purgatives, were assiduously administered; and he was encouraged by his medical attendants to take two or three glasses of strong gin and water daily, to assist the secreting powers of the kidneys. It was at this time that I first saw him, and found that he was dying from the effects of inflammation of the brain; besides other symptoms, there was paralysis, with rigidity of one arm. On dissection, the central parts of the brain were found in a state of ramollissement, with effusion into the ventricles, and great vascularity, not only of the membranes, but also of the substance of the brain. There was no diseased appearance about the kidneys, but a flabbiness; the bladder was much contracted; the prostate gland was enlarged, indurated, and contained a white calculus in its substance, about the size of a large garden-pea. It is too evident, from the history of the case, that the affection of the brain was altogether overlooked.

*Treatment of suppression of urine.*—Much mischief is occasioned in many cases of diminished secretion of urine, by the indiscriminate employment of diuretics. I believe this class of remedies is chiefly serviceable in promoting an increased flow of urine at the decline of the disease, after the functions of the kidneys have been considerably restored, when a combination of squills, calomel, and digitalis, in the form of a pill, in the proportion of half a grain of the two former substances, and two or three of the latter, may be used and repeated three times a day. But should the mouth become affected, the calomel is to be omitted. Cream of tartar is also to be given freely, and may be occasionally changed for some vegetable infusion of known diuretic qualities, such as juniper, broom, &c. Balsam of copaiva, oil of turpentine, sweet spirit of nitre, and tincture of cantharides in small doses, are often adminis-



tered, and sometimes with effect; but they ought to be given with great caution, and under the restriction already spoken of.

The principal points to be attended to, are to excite the skin and the bowels in a powerful manner alternately, the latter by means of neutral salts dissolved in a large quantity of water. Practitioners should anxiously watch cases of this nature, in order to discover the approach of any affection of the brain, which is to be combated upon the principles laid down in another part of the work. Should there be pain in the region of the kidneys, it may be relieved by local abstractions of blood,—by the application of rubefacients, or even of blisters.

#### RETENTION OF URINE.

THIS term ought to be restricted to an inability to evacuate urine from the bladder, which may be more or less distended by the secretion. Retention of urine is sometimes the consequence of a diseased condition of the brain, spinal marrow, or the nerves supplying the bladder itself; it is occasionally a symptom of stone in the bladder, but more particularly of disease of the prostate gland, and stricture in the course of the urethra. It is frequently produced by neglecting to empty the bladder in due time, when the organ subsequently becomes filled to such a degree as to be either paralyzed, or merely unable to act from over-distension.

The symptoms are, pain in the region of the bladder, with frequent and violent desire to make water, and bearing-down efforts, exactly as in labour. Occasionally there is tenesmus, and if the patient be not soon relieved, the pain extends along the course of the ureters to the loins. The distended bladder is to be felt above the symphysis of the pubis; sometimes its fundus reaches as high as the umbilicus. Generally there are constitutional symptoms, such as fever, thirst, oppression at the præcordia, together with an anxious expression of countenance, and occasionally severe headache.

The danger to be apprehended, is not that the bladder will burst, but that peritoneal inflammation will ensue. Instances are stated where sixteen pints of urine have been evacuated from the bladder, which seems almost incredible, if we did not know how greatly the organ is capable of being distended. I have myself seen more than one instance, where eight and even ten pints have been drawn off. When describing the appearances found on dissection in erysipelas, the case of a woman was mentioned, where the urine, during a second attack of retention, escaped at the umbilicus, in consequence of the fundus of the bladder becoming attached by adhesive inflammation to the peritoneum corresponding to the umbilicus, and ulcerative absorption taking place. I have now to mention, that four years previously, this woman had had retention of urine for four days, before she was relieved by the catheter, and I was informed that sixteen pints of urine were then evacuated. It appeared from the strength of the adhesion between the fundus of the bladder and the umbilicus, that it was at that period the adhesion had taken place.

We must keep in mind, that a distended bladder sometimes takes place in women during the early months of pregnancy, in connection with a displace-

ment of the uterus, termed retroversion, in which case its cervix will press against the neck of the bladder or the urethra, and occasion a mechanical obstacle to the flow of urine. Retention of urine also sometimes follows delivery, in consequence of the long continuance of the pressure to which the urethra and neck of the bladder have been subjected, during the passage of the child's head.

*Treatment of retention of urine.*—The principal remedy is the introduction of the catheter, but as this is sometimes objected to by men, from the apprehension of its being a painful operation, and by females from natural delicacy, it is often necessary first to try other expedients. The chief of these, are the use of the hip-bath, or hot fomentations to the region of the pubis; large, tepid, and unstimulating injections into the rectum; the internal exhibition of camphor and opium, or hyosciamus, the tincture of the muriate of iron, or sweet spt. of nitre. When these remedies fail, it has been recommended to employ injections of the infusion of tobacco. The use of the catheter may sometimes be avoided by a very simple expedient, of pouring water in a continued stream from one vessel to another within the hearing of the patient, but which I imagine can be effectual only when the retention is produced by a spasmodic affection near the neck of the bladder, or by a general paralysis of the fibres of the organ. A medical gentleman lately mentioned to me, that he has rarely failed in relieving the retention, when there was no permanent obstruction, by giving doses of from ten to twenty drops of the vin. nicot. tabaci every second or third hour.

When called to a case of this kind, we must take a general view of the symptoms, the duration of the distention, the general condition of the abdomen, together with the state of the pulse, the heat of the surface, and the expression of countenance, in order to determine whether peritoneal inflammation exists. Should this be the case, general bleeding, or the application of leeches, must be had recourse to: and it must not be forgotten, that when the complaint terminates fatally, the event is in general produced, not by rupture of the bladder, but by peritonitis.

In treating this affection, we must not be deceived and lulled into security by the patient's passing a small quantity of urine, as it sometimes dribbles away, when the bladder is ready to burst from over-distension.

#### INCONTIENCE OF URINE.

WHEN a person cannot retain any urine in the bladder, but constantly passes it involuntarily as quickly as it is secreted, he is said to labour under incontinence of urine. It is a frequent attendant on paralytic disorders, which produce atony of the sphincter of the bladder; it may also be caused by acrid urine stimulating the bladder to contract as soon as it has entered it, and also by irritation about the bladder or urethra, as well as by a superabundant secretion of urine.

In the case proceeding from paralysis, the best remedies are the application of a blister to the upper part of the sacrum,—the internal use of the tincture of cantharides, in doses of from ten to twenty drops three times a-day, in a wine glassful of lint-seed tea, or a little mucilage,—and also cold bathing. If it proceed from acrid urine, diluents should be employed, particularly lint-seed tea, together with cooling laxatives. In such cases the introduction of the catheter will be found serviceable.

The incontinence of urine which proceeds from irritation or inflammation about the neck of the bladder and urethra, may also be produced by acrid urine, or by sand or gravel passing through the urethra. If there be a superabundance of lithic acid, alkalies should be administered, and in severe cases it is serviceable to throw tepid water into the bladder. Anodyne injections are also to be used. In all cases where there are pain and irritation in the urinary organs, the pills formerly mentioned, composed of equal parts of camphor and hyosciamus, should be administered.

## CHAP. IV.

### HÆMATURIA, OR DISCHARGE OF BLOOD FROM THE URINARY PASSAGES.

---

It should be kept in remembrance, that when blood is passed by the urethra, it may proceed from one of three sources, viz. the kidneys, bladder, or urethra itself.

When the discharge comes from the kidneys, the patient complains of a sense of fulness, weight, and dull pain in the loins, accompanied with some degree of faintness and nausea. When from the bladder, a sense of heat and fullness in the hypogastric region, involuntary bearing down, and urgent desire to make water. But active hæmorrhage for the most part takes place from the urethra only, and is generally the consequence of the use of the bougie in cases of stricture. If such a discharge take place from the kidneys or bladder, it will in general be found to depend on external injury. A few months ago, I attended a patient who discharged, for the space of a week, a large quantity of florid blood daily; sometimes it flowed from him when in bed, at times when affected with priapism, at others when making water, so that it was occasionally pure blood, and at other times blood mixed with urine. The complaint seemed to have been produced by a long train of sacrifices at the shrine of Venus.

A discharge of blood from the urethra sometimes takes place in the course of purpura hæmorrhagica, as has been already mentioned. A discharge of blood frequently occurs where there is a stone in the bladder, and I have seen it produced by the internal use of cantharides.

*Treatment of hæmaturia.*—It is necessary to ascertain whether or not the discharge is confined to the urethra, respecting which the history of the case will generally inform us. If there be considerable pain in the region of the bladder, more particularly if the bladder be much distended, it will be sometimes found serviceable to introduce as large a silver catheter as can be passed.

In the treatment of active hæmorrhage from any organ, if the pulse be full, and if there be marks of lost balance of the circulation, the beneficial effects of opening a vein in the arm have been long well known. It is to be re-



commended in this case also, if the pulse be strong, and more particularly if much local pain exist; but in the case noticed above, I depended entirely on the use of the acetate of lead in considerable doses. The patient was kept nine days under the influence of this medicine. During the three first days he took 5 grains of that preparation, combined with a small proportion of opium, three times a-day; and for the remaining six days the quantity was increased to 10 grains thrice a-day. I never had greater reason to be satisfied with the action of any medicine, the only unpleasant effect it occasioned was constipation.

Gentle laxatives, and cold water enemata, are to be employed in all cases of hæmaturia. If there be much constitutional irritation, opiates will be found serviceable, and their use cannot be dispensed with if the patient have lost such a large quantity of blood as to produce a great and permanent impression upon the system. In cases accompanied by vomiting, which is a frequent attendant on excessive hæmorrhages, opium should be given, combined with calomel. The external application of cold may do good in slight cases, if the person be able to sit over a tub or on a bidet, but the application should not be persisted in too long; and it is bad practice, particularly in severe cases, to keep a person's garments constantly wet. It does mischief, by abstracting heat from the body when it cannot be spared, as well as by driving the blood from the surface, and keeping up a tendency to irregular distribution.

The best plan of stopping the discharge of blood which has its source in the urethra, is by pressing that canal in different places between the finger and thumb until the hæmorrhage is commanded, and afterwards to apply a large compress to the part by means of a T bandage, so as to keep up the necessary degree of pressure.

## CHAP. V.

### DIABETES.

---

By this term is meant a super-abundant secretion of urine, containing a large proportion of saccharine matter; sometimes, however, the quality of sweetness is wanting. To the former, authors have applied the term *Diabetes Mellitus*, in contra-distinction to the other, which has been termed *Diabetes Insipidus*.

It has been recommended, however, that the term "diabetes" should be restricted to those instances in which the urine is saccharine, and I shall follow this suggestion.

It is my invariable plan, both in lecturing and writing, to make marked distinctions between those diseases with which experience and actual observation have made me acquainted, and those respecting which I know little, and that little from the experience and writings of others. In commencing the consideration of this intractable, but rare disease, it is my duty to confess that I know nothing whatever respecting its nature and seat. Since writing the former edition of this work, three cases of diabetes have fallen under my care.

Notwithstanding the attention which this singular disease has attracted, since the celebrated Willis drew the attention of the profession to its investigation in 1684, and although men of powerful minds, assiduous habits, and great practical experience, have been drawn into discussions respecting it, doubts to this day exist, not only as to the nature of the disease, but also the organ principally and primarily affected. True it is, that, by the assistance of morbid anatomical investigations, we have found out some diseased appearances in the urinary and digestive apparatus; and that, by the aid of chemistry the morbid character of the urine, and its component parts, have been discovered; yet it has never been explained in a satisfactory manner, whether the diseased state of parts, and the morbid state of urine, stand in relation of cause or effect. Still greater mystery hangs over the subject, when it is known that the kidneys have been found perfectly sound in structure, and unchanged in appearance. Were we to be led, in forming an opinion as to the primary seat of the disease, by the accounts which a majority of patients give of their

first symptoms, we should certainly feel disposed to fix upon the stomach, and not upon the kidneys, as the proper seat of the affection; but then the same may be said of almost all the disorders of the urinary system.

*Symptoms of diabetes.*—“Diabetes is attended (says Dr. Latham,\* p. 1.) for the most part with a very voracious appetite, and with an insatiable thirst; with a dry harsh skin, and clammy, not parched, but sometimes reddish tongue; and with a frequent excretion of very white saliva, not inspissated, but yet scarcely fluid. As the disease proceeds, it is accompanied often with a hay-like scent or odour, issuing from the body, with a similar sort of halitus exhaling from the lungs, and with a state of mind dubious and forgetful: the patient being dissatisfied, fretful, and distrusting, ever anxious indeed for relief, but wavering and unsteady in the means advised for the purpose of procuring it.” Diabetes comes on very insidiously; the patient complains of unusual lassitude, and a tendency to perspire on every slight exertion; and although the appetite is much greater than natural, the digestion is seldom good, there being uneasiness in the stomach after eating, flatulent distension, heart-burn, and an irregular state of bowels. Pain is sometimes complained of in the region of the loins; occasionally it is very violent, and there is always a weakness referred to that part of the body. As the disease goes on towards a fatal termination, there is a feeling of exhaustion; difficulty of breathing, together with dropsical infiltration into the lower extremities, and general rapid emaciation, take place; the pulse, which is not usually much affected at the commencement, becomes quick and weak.

The urine is of a straw colour, having a peculiar smell, which struck me to resemble whey that had been allowed to stand till it became somewhat sour; the quantity passed in twenty-four hours has been stated as high as two hundred pounds, (Roche and Sanson, vol. 2. p. 121.) but keeping extraordinary cases entirely out of the question, it is certainly most remarkable, that the urine, in confirmed cases of diabetes, always exceeds the weight of both solid and fluid ingesta. The secretion may be stated at between ten and twenty pounds daily which obliges the patient to evacuate the bladder very frequently, and disturbs him four or five times during the night, which, by breaking the rest, assists in destroying his health.

The quantity of sugar in diabetic urine is very various, even in the same individual; as much as one ounce has been extracted from each pound of urine, sometimes even more, but the average quantity is not nearly so great. A considerable proportion of saccharine matter has been collected by evaporation, when it could not be detected by the taste; but we are told that the quantity may always be estimated by the specific gravity of the urine. According to the French, the most delicate agents scarcely indicate the presence of the lithic and phosphoric acids, the phosphates of soda, lime, or the am-

\* Dr. Latham has investigated and criticised ancient and modern opinions on this disease, with the greatest ability, in a work entitled “Facts and Opinions concerning Diabetes,” 1811, to which I can with the greatest confidence refer my readers for much valuable information.

moniaco-magnesian, which are always present in the healthy state of this fluid.

Diabetes has been generally fatal; its duration has been variously stated from five or six weeks to many months, and even to several years.

*Appearances on dissection in diabetes.*—I have seen two dissections, in which the kidneys to all appearance were in a healthy state, and in which the lungs, and the mucous membrane of the stomach, and of a great portion of the bowels, were diseased, the former being tuberculated, and the latter vascular, the vessels gorged with dark blood, and the membrane itself soft and pulpy. It has been stated, however, by others, that the only organ in which any morbid structure has been clearly ascertained, is the kidney. Mr. Cruickshank, in his work on the lacteals and lymphatics, affirms, that the arteries of the kidneys are generally enlarged in this disease, particularly those of the cryptæ, or minute glands which secrete the urine. In a case which occurred to Dr. Baillie, “the veins upon the surface were much fuller of blood than usual, putting on an arborescent appearance. When the substance of both kidneys was cut into, it was observed to be every where much more crowded with blood-vessels than in a natural state, so as in some parts to approach to the appearance of inflammation. Both kidneys had the same degree of firmness to the touch as when healthy, but I think were hardly so firm as kidneys usually are, the vessels of which are so much filled with blood. It is difficult to speak very accurately about nice differences in degrees of sensation, unless they can be brought into immediate comparison. A very small quantity of a whitish fluid, a good deal resembling pus, was squeezed out from one or two infundibula in both kidneys, but there was no appearance of ulceration in either.” This description of the condition of the kidneys would most exactly represent that seen in many cases of cholera, in which the secreting power of the kidneys had been destroyed for days.

*Causes of diabetes.*—Diabetes attacks men more frequently than women, but seldom earlier than in middle age. I believe it has been found that no rank of society is exempt from its invasion; and it does not appear that any kind of occupation predisposes to it more than another. It is also said to be unknown in warm climates, although I have heard of an instance which occurred in the West Indies. There can be no doubt, however, that it is more frequently seen in cold humid climates, therefore it is said to be more common in Holland and in England than elsewhere; but if this were the case, not only with respect to climate, but other exciting causes generally mentioned, such as “chagrin, vegetable diet, intemperance and other excesses, suppressed eruptions, atonic gout, diseases of the liver, lungs, &c. and ill-conditioned ulcers,” we should see the disease every day, where it is avowedly rare. A curious fact may be mentioned, which was first stated by Chesselden, and is mentioned at page 139. of his Anatomy, viz. that sweet urine is sometimes secreted in cases of chronic carbuncle.



*Pathology of diabetes.*—From all the facts hitherto collected, very different pathological conclusions have been drawn, and supported by men of acknowledged celebrity.

1. It has been supposed that the disease depends upon a morbid condition of the stomach, or other viscera connected with the assimilation of the food, and the process of chylicification.

2. On the imperfect animalization of the blood.

3. Upon the retrograde action of lymphatic vessels.

4. Upon a morbid condition of the kidneys themselves.

As I am so imperfectly acquainted with the disease, I think I cannot do better than condense the opinions which have been collected by Dr. Mason Good in his "Study of Medicine."

1 It seems to be a most extensively received hypothesis, that diabetes depends upon a diseased action in the stomach, &c. Dr. Mead, observing that the disease frequently occurred in those who had been accustomed to live intemperately, and who were chiefly addicted to the use of spirits, attributed it to affections of the liver, which opinion was very generally received in his time.

Dr. Rollo, formerly Surgeon-General of the Artillery, was among the first who referred the disease to the stomach; he believed that it consists in an increased action and secretion in this organ, with a vitiation of the gastric juice, and probably a too active state of the lacteal absorbents; while the kidneys and other parts of the system, as the brain and skin, are only affected secondarily.

He also supposed that the blood is imperfectly formed, and deficient in its saline principles which are converted into saccharine matter by the chylopoietic and assistant chylopoietic viscera; but a fatal objection to this part of the hypothesis is, that it has been found, by experiments performed by Wollaston and Marcet, that blood taken from diuretic patients before it has reached the kidneys, contains its proper salts, and shews no vestige of sugar. There can be no doubt however, that the first symptoms of which patients complain are referred to the stomach, and that this organ has been found with diseased appearances after death. A stomach was lately presented to me, shewing this fact in a remarkable degree; there is a drawing of its appearances when recent in my possession, and the stomach itself is dried and preserved, and still shews these appearances.

2. With respect to the second opinion, that diabetes depends upon an imperfect animalization of the blood, the hypothesis originated with Willis immediately after he detected the existence of sugar in diabetic urine, since which it has been subscribed to by many distinguished pathologists, among whom we find the name of Sydenham. The chief support upon which this opinion is founded, is the appearance of the blood itself, which is dark-coloured, has what has been termed a dissolved appearance,—looks like treacle, and when allowed to stand after being drawn from the system, does not separate

much, if any, serum; but on the other hand, the experiments of Wollaston, Marcet, and others, which go to shew that the blood contains its proper salts, and no vestige of sugar, have proved equally fatal to this as to the last hypothesis.

The theory, however, is advocated by Dr. Latham, who believes the action of the stomach, as well as of the kidneys, to be healthy, and considers the excessive appetite to be a "natural sensation calling into its full exercise that organ through which the constant waste of the body must be directly supplied, and without which the patient must soon inevitably perish," (p. 230.) He endeavours also to shew that the elements of sugar may exist in the blood, although in substance it is not discoverable, being "so weakly and loosely oxygenated, as to be again readily evolved by the secretory action of the kidneys, not from any fault in the kidneys themselves, but from the regular and natural exercise of their functions, in separating from the imperfect blood such matters as are not properly combined with it." (p. 97.)

3d. The third opinion, that diabetes depends upon a retrograde action of the lymphatic vessels, first originated with the son of the distinguished author of the *Zoonomia*, by whom it was afterwards very keenly supported. According to his view, the saccharine matter is formed in the digestive organs, and then carried by a retrograde motion of the lymphatics to the kidneys. In reference to this subject, Mr. Cruickshank asks the following query (at p. 59.): Why should the chyle flow retrograde into the lymphatics of the kidney, and not into the lacteals themselves? and why are not the feces fraught with a similar fluid, as well as the urine?—These are unanswerable queries, and are fatal to this hypothesis.

4. Diabetes has been referred to a morbid condition of the kidneys themselves. This opinion was entertained by the Greek writers, who supposed the kidneys were in a state of great relaxation, debility, and irritability. A considerable number of the profession have adopted the opinion, that the kidneys are really the primary seat of the disease; and the majority of these ascribe it to some degree of inflammation, although by some it is attributed to spasm. Cullen adopted this last notion so completely, that he placed diabetes in his class *Neuroses*, and order *Spasmi*, immediately before *hysteria* and *hydrophobia*; for doing which he has given, as Dr. Mason Good observes, a most unsatisfactory reason. Many suppose, then, that there is no necessity to look further than the kidneys for the seat of the disease, and that its nature is to be attributed to a *morbid irritation, connected with an inflammatory action of a peculiar kind*, therefore it is believed by them to be a very simple and uncomplicated disease. Dr. Mason Good is a strenuous supporter of this view; and the following are the most forcible of his arguments. It is well known that the secretion of the kidneys is capable of being increased by various agents. He believes that a strong analogy exists between dropsy and diabetes; and as a large quantity of fluid is thrown out, in the former, from the excited secretory vessels, there can be little difficulty in believing, that from a primary

morbid excitement in the kidneys themselves, they may eliminate as much urine as is ever passed by diabetic patients. He also considers the analogy between dropsy and diabetes to be strongly supported by the existence of similar constitutional effects; the whole body, drained of the thinner parts of the blood, is weakened and emaciated, and most of its functions are either performed very slowly, or are altogether retarded; but he believes with Dr. Latham, that the excessive appetite, so frequently observed in diabetes, is a direct proof of the soundness of the functions of the stomach although they are inordinately excited to supply the general wants of the system.

The supposition that the remarkable change in the composition of the urine takes place in the blood, appears to Dr. Good to have arisen from the difficulty of imagining how the kidneys, the natural function of which is to secrete an alkali and an animal acid, should have their action so completely perverted as to secrete saccharine matter; but he states, that under particular circumstances, many organs exhibit a disposition to throw out sugar, both in health and in a disease, whatever may be their proper secretion; and this circumstance occurs under the use of animal, as well as of a vegetable diet. Thus human milk is peculiarly sweet: saliva and pus sometimes exhibit the property of sweetness, and the sweat in some fevers smells of oxalic acid.

It is difficult for me to form any pathological opinions from the discordant facts which have been recorded respecting this disease, having had no opportunity of investigating the matter with the advantage of a full knowledge of what had been already done by others. Guarding myself, however, against the effects of the special pleading of many writers on this subject, I cannot help coming to the conclusion, that the truth lies between the two extremes; that pathologists have been too anxious to attribute the disease to one particular organ,—and that those who object to the view, that the kidneys are the seat of the disease, have probably expected to find some very uncommon disorganization or vascular turgescence. I am inclined to believe, that diabetes is a functional affection of the kidneys, produced by a combination of circumstances which rarely exist, otherwise the disease would be of far more frequent occurrence; and that we may look for that combination to the functions of the stomach, and other organs connected with digestion, and also to those of the lungs; and if this be admitted, there can be no difficulty in perceiving that the constitution of the blood must suffer some alteration, and that the functions of the nervous system must likewise be considerably embarrassed.

*Treatment of diabetes.*—The different views entertained by medical men concerning the pathology of the disease, have led to various and very opposite modes of treatment. Willis, with the view of giving firmness and coagulability to the blood, and of invigorating the system, recommended a cooling diet, the albumen of eggs, tragacanth and gum arabic, to which he added rhubarb, cinnamon, lime-water, and cordials, and opiates if required.



Sydenham carried the invigorating plan still further ; he prescribed animal food of easy digestion, with an allowance of wine, and abstinence from vegetable substances.

Frank has great faith in the application of a blister to the sacrum, and the internal exhibition of assafœtida, valerian, &c.

Rollo, with the expectation of preventing the formation of sugar, and favouring that of the animal salts, enforces a total abstinence from vegetable diet, a very liberal allowance of animal food, and the use of hepatized ammonia, together with occasional narcotics ; and under the idea that the stomach alone is at fault, he recommends an occasional emetic.

Dr. Latham, with the exception of the use of emetics, to which he objects, subscribes to the treatment recommended by Rollo, although he entertains different pathological opinions. He substitutes phosphoric acid for the ammonia, with a view of supplying the deficiency of the animal salts, particularly the earthy phosphates.

Those who believe the kidneys to be irritated, if not inflamed, recommend general and local bleeding ; and to the late Dr. Watt of Glasgow, belongs the merit of reviving the practice, which had altogether fallen into disuse. He trusted almost exclusively to bleeding, and it would appear with considerable success. Dr. Satterley has since followed this plan with even greater success than Dr. Watt, and an account of his cases is to be found in the 5th vol. of the Medical Transactions. The subject of Dr. Satterley's first case, was a man 32 years of age, previously debilitated by long-continued ill health. He was admitted into Middlesex Hospital on the 18th of February 1809, labouring under well marked symptoms of diabetes, with a small, quick, and hard pulse and excessive thirst. On the 19th, 14 oz. of blood were taken from him ; he was ordered to have animal food, and a moderate allowance of liquids. On the 20th, 18 oz. more were abstracted ; 20 oz. on the 23d ; 29 oz. on the 25th ; and 18 oz. each day on the 28th, the 3d and 11th of March, making an amount of 126 oz. in the course of 20 days.

Along with this active treatment were conjoined restriction to animal food for diet, lime-water and alum-whey for drink, occasional purgatives, and very frequently, during the whole course of the disease, one grain of calomel, and a dose of Dover's powder at bed-time.

The diminution effected by the bleedings on the quantity of urine passed in 24 hours, is as follows ;—after the first bleeding, it was reduced from 16 quarts to 11 ;—the second, to 6 ;—the fourth, to between 5 and 7 ;—the fifth, to between 5 and 6 ;—after the sixth, to less than 5 ; and after the seventh, to about 3, sometimes 2 quarts.

The excessive thirst gradually left him, and his health and strength improved. He remained, however, in the Hospital for some time, in consequence of an attack of pneumonic disease, for which he required to be bled once or twice ; but was ultimately discharged cured, and he had no return of the diabetes several years afterwards.



Other instances are recorded by Dr. Satterley, in which the same plan was pursued with the like success; but some practitioners who entertain similar opinions concerning the nature and seat of the disease, endeavour to allay the local and general irritation by means of the frequent exhibition of narcotic medicines, such as opium, without having recourse to venæsection.

The following is a summary of the practical conclusions at which Dr. Mason Good arrives. Diabetes attacks different ages, constitutions, and habits, consequently it requires different modes of treatment. It is situated in the kidneys, with the state of which other organs sympathize. Animal food diminishes the tendency to saccharine secretion. Opium, in some instances, allays the irritation, and at length subdues it; but, in other cases, a free use of the lancet effects these ends more speedily. Colchicum has sometimes proved of more advantage than opium. Free depletion cannot be had recourse to in all cases, as the disease often attacks the old, and those who have been previously debilitated; it is only admissible in cases where the constitution and digestive organs are unimpaired. Tonics and astringents, together with the mineral acids, which allay the distressing thirst, are often found serviceable, as are lime-water, alum-whey, and mineral waters.

I have only to add, that from the effects of acetate of lead in restraining active hæmorrhage, and other discharges, it may be found useful in diabetes, and is therefore worthy of trial. It was beneficial in the three cases to which I have alluded. The last accounts received from one of the patients, stated that he had been quite well for several months.

## CHAP. VI.

### SYPHILIS.

---

MUCH learned controversy has taken place respecting the origin of syphilis, but, after all, it is more interesting to naturalists and historians than to practical men. As my object is to offer the result of my labours to the profession in as small a space as possible, the history of the origin of this disease is inadmissible with my plan, particularly as points of immense practical importance have been abridged, at the risk of producing obscurity which more ample illustration would prevent.

Syphilis appears under various forms, and is supposed to be produced by a peculiar virus applied to the parts of generation during impure connection. It occurs generally from the third to the seventh day after the application of the syphilitic matter. Some allege that it may take place later. The symptoms produced by the syphilitic virus have been divided into local and constitutional, and also into primary and secondary; I shall restrict the term constitutional to the febrile symptoms, which are sometimes produced when the local inflammation is intense and deep-seated, and shall apply that of secondary to all other constitutional effects, such as sore throat, cutaneous eruption, nodes, &c.

*Local symptoms of syphilis.*—When a sore is situated on the parts of generation, the fruit of impure connection, it is termed a chancre, and may be on the glans, the prepuce, at the angle formed by the junction of the two former, at the frænum, at the orifice of the urethra, or on the body of the penis. In the female, chancres are generally situated about the labia, nymphæ, clitoris, and meatus urinarius.

The first appearance of a chancre is generally announced by some degree of itching, and upon examination, something like a pimple is observed, having an inflamed base, which feels hard to the touch; it soon shews an elevated point, from a small opening in which a limpid fluid is discharged, and from which ulceration extends more or less rapidly. Some ulcers are superficial, with hardened bases; others are raised and spongy; while some extend very deep, and are surrounded by hard, ragged edges. Ulcers on the prepuce are generally raised, and are larger than those situated on the glans, which are more frequently excavated than those on the prepuce. Chancres also origi-

nate from cracks or fissures, which so frequently take place on the prepuce, at which parts ulceration subsequently happens; or a pimple or vesicle is formed, from the apex of which the ulceration extends. There is another appearance frequently observed, viz. a large excoriation resembling the sores which take place behind the ears of children, and which affects not only the glans, but the lining membrane of the prepuce, and produces considerable inflammation, profuse discharge, and often swelling of the prepuce itself, preventing its retraction, and thus forming the state called *phymosis*.

The degree of inflammation which accompanies these varieties of chancre, differs very much, sometimes being very slight; at others, so severe and extensive as to terminate in sloughing of considerable portions of the penis. This, there is every reason to believe, depends more upon the state of the constitution of the patient than upon the virulence of the matter applied. The degree of pain also varies, sometimes being exceedingly severe, at others scarcely complained of, and seems to depend more upon the depth and activity of the inflammation, than upon the extent of surface involved, or the swelling of the part.

In certain states of the constitution, an eruption of vesicles appears on various parts of the body, and not uncommonly on the penis, particularly at the prepuce, and has therefore been called *herpes præputialis*; and I agree with Bateman and others, that this affection sometimes bears such a close resemblance to chancre, as to be liable to be mistaken for it; and Mr. Plumbe states, (at page 310,) that the mistake "is by no means an occurrence to be apprehended, *where much professional knowledge exists* on the part of the surgeon or physician;"—and further, that, "at the present day *no man who knows what he ought to know of the science could possibly commit such a blunder*," yet it is my duty to confess that I fear I have often committed it, and am inclined to believe that there are few men in practice who have not committed it. Sores on the labia of children produced by acrid discharge are frequently seen, which closely resemble the description of the true Hunterian chancre, and I have seen the same appearances in the mucous membrane of the bowels. From observation, I am inclined to believe, that for one instance of the true Hunterian chancre other sores are met with fifty times.

The glands in the groin frequently inflame and suppurate during the existence of ulcers on the external parts, but it is comparatively rare that this occurs on both sides. It does not appear that buboes take place in an average of cases more frequently than once in twenty. On some occasions they suppurate quickly, on others very slowly, and sometimes attain a considerable size, and continue indurated for many months before suppuration takes place, if it take place at all.

*Secondary symptoms of syphilis.*—The most frequent of these is an ulcerated state of the fauces, pharynx, and Schneiderian membrane. The disease, in bad constitutions, and under improper treatment, may destroy considerable portions of the soft palate, uvula, and tonsils; the ulceration sometimes ex-

tends to the epiglottis, and even to the larynx, so as to destroy its cartilages, and in process of time into the nose, affecting and destroying its bones.

Various eruptions on the skin also occur, assuming the form of papulæ, pustulæ, squamæ, and in fact there is scarcely a form of disease noticed in Willan's orders or species, which we do not occasionally see ranked among the secondary symptoms of syphilis. It is said that syphilitic eruptions present a copper-coloured appearance, and a diagnosis is too often drawn from this circumstance.

Inflammation of the periosteum often occurs, particularly on the tibia, forming nodes, and the bones themselves sometimes become affected, more particularly those of the nose and head, melancholy examples of which are to be seen in every museum.

Inflammation of the iris is alledged to take place during the course of syphilitic affections, produced by the specific effects of the virus;—the fact is undisputed, but the conclusion as to the cause is more than doubtful.

Secondary symptoms may occur shortly after the healing of a primary sore; it is alledged they may not take place till after a considerable lapse of years, although the patient in the interval may enjoy perfect health.

*Treatment of the primary symptoms of syphilis.*—The treatment of primary sores should be conducted upon the following principles. We should be guided, not by any general theory, but by the appearance of the sore itself, and the state of the patient's constitution; it should be recollected, however, that the subjects of these affections are generally young, thoughtless, and dissipated, who have contracted the disease after a course of hard living, and were, at the time of infection, in a state of high excitement from the use of stimulants, having also perhaps the stomach and bowels in very bad condition, contaminating all the secretions of the body. If there be much inflammation, pain, and swelling, or should the ulceration shew a tendency either to spread rapidly or to assume a bad character, a vein must be opened, and a sufficient quantity of blood abstracted; and I may state shortly, that I have often been surprised and gratified at witnessing the immediate benefit of this treatment. I have seen large quantities of blood (30 or 40 oz.) taken on such occasions, and can safely say, without once observing any bad effects. Under the circumstances which call for venæsection, no external application should be made to the part, except warm anodyne fomentations, or perhaps what will be found still more beneficial, the vapour of hot water.

Antimony is often of considerable service as a counter-stimulant, either as an auxilliary to the bleeding, or in cases where the circumstances do not exactly call for the lancet, or when we are afraid to use it.

Laxative medicines are to be occasionally exhibited; the patient's diet should be restricted to vegetable substances; and confinement to bed for at least a few days is highly necessary, particularly in the severe cases now under consideration.



After the inflammation has been reduced, and in cases which are not attended by any considerable action, but in which the sores are very irritable, the careful application of a strong solution of the nitrate of silver (20 grains to the oz.) is often serviceable. In those cases which are neither attended by excessive inflammation nor irritation, the best application is a small piece of lint, not larger than the size of the sore itself; and the part is to be exposed five or six times in the course of the day to the vapour of hot water, or it may be kept wet with any bland liquid. Great cleanliness is necessary in all cases, but as the sore is often irritated, and additional inflammation excited by drawing back the prepuce, the fluid should be thrown up between the prepuce and glans by means of a small syringe. On many occasions no further means will be necessary, if we are applied to early; but from various motives, patients are often induced to conceal their complaints for a considerable time, and when we are consulted, the sores are found too far advanced for simple remedies. In such circumstances, various washes have been used, as solutions of the acetate of lead, sulphates of zinc, copper, and alumina, and the nitrate of silver. The oxymuriate of mercury, as well as the muriate, mixed in lime water, are also frequently used as external applications; the one is familiarly known by the term "yellow," the other "black wash." The latter is made by throwing a dram of the sub-muriate into eight ounces of recently prepared lime water; a precipitation takes place of a dark colour. This preparation is more frequently used than the yellow wash, and I believe is generally admitted to be more efficacious than any other single application. In making choice of any particular lotion, it is found to be a good rule to change from one to another, should the sore shew no appearance of amendment in the course of three or four days.

Various ointments have been also often used,—of these, the common mercurial and the red precipitate stand in the highest estimation; but it has been generally found that greasy applications do not answer well. When astringent or stimulating preparations are required, their strength must be regulated by the effects they produce on the part; slight temporary pain should be occasioned when we wish to excite a little increased action; when, however, the sore is in a very indolent state, a strong solution of the nitrate of silver will, upon the whole, be found to be most effectual; the solid caustic itself is often necessary, particularly when a tendency is shewn towards the formation of warts.

In treating cases of primary sores, whatever may be their external character, whether they succeed impure connexion or not, my plan has been to treat them in the manner above described in the first instance; but should there be no decided appearance of amendment in the course of ten or twelve days, then I am in the habit of prescribing a five-grain mercurial pill morning and evening, and I have rarely had occasion to give above eighteen pills before a permanent cure was affected. It has been ascertained, however, by numerous experiments performed within the last fifteen years by different

individuals in different countries, that all primary sores can be eventually healed by the simple non-mercurial plan of treatment; and although this practice cannot be called altogether new, still, when we reflect upon the immense destruction of human life and domestic happiness, created by the diabolical mercurial plan previously pursued, the effects of the exertions of every gentleman who has been instrumental in proving the safety of the non-mercurial treatment, cannot be too highly estimated. Although the services of Dr. Thomson are well known and acknowledged by many, yet I am grieved to see his name passed over in some of the popular works of the day. In the learned work of Dr. Mason Good, the merit of introducing this practice is entirely referred to Mr. Rose, Surgeon to the Coldstream Regiment of Guards. Dr. Mason Good states, (vol. iii. p. 388.) that Mr. Rose "was determined to put the question to a test, and upon such a scale as might lead to something of a decisive result; he forebore in consequence, about the year 1815, to employ mercury for the cure of any case of syphilitic affection.

It is well known that Dr. Thomson led the way, both by precept and example, long previous to 1815; and if I recollect right, it was in consequence of the views which Dr. Thomson gave in his course of lectures on surgery, that I was induced in the year 1808 to treat more than one case of chancre without mercury, which had all the appearances of true syphilis. In one instance secondary symptoms ensued in the form of sore throat and eruption, which were also successfully and permanently cured upon the same principles; and it so happens, that I have still an opportunity, from frequent intercourse with the individual, to know, that he has never suffered from the plan pursued, and that he has a large family of healthy children. I also recollect, when I first took charge of the sick in the Ordnance Hospital at Leith Fort, in the beginning of the year 1811, having been strongly advised by Dr. Thomson not to give mercury. Dr. Thomson's opinions were well known both at home and abroad before the year 1815, at which period I believe there was not a military or naval surgeon in the service of Great Britain who was not aware of them; therefore it must be acknowledged that Dr. Thomson has not received that merit which is justly his due, as will be seen by the following extract copied from the work above-mentioned:—"The experimental course laid down by Mr. Rose was soon adopted by others, and, on various occasions, carried into establishments which afforded ample space for a satisfactory examination. It was tried in other battalions of the guards, as well in France as at home; was introduced into the York Hospital at Chelsea, and various other establishments, as at Dover, Chatham, and EDINBURGH." (p. 388.)

These observations are not dictated by feelings of personal friendship, but are made from a strict sense of justice towards Dr. Thomson.

It cannot now be denied, that all syphilitic sores may heal without having recourse to mercury; and on the other hand it is known, that by a judicious use of various preparations of that mineral, the same event may take place.

But an interesting question immediately suggests itself,—by which plan will a cure be most speedily and effectually obtained? I have found, that according to either plan, permanent and effectual cures are produced, but more speedily under the judicious use of mercury, along with blood-letting, and the other means, local and constitutional, which have been already noticed; but there are constitutions that cannot bear the action of mercury, and upon which it produces poisonous effects.

Although I should be entitled to insist on the force of these observations, drawn from my own practice, yet they are rendered still more worthy of confidence by the united testimony of a number of gentlemen, who have directed their attention to the settling of this important question. Dr. Hill, who has written an excellent paper on the simple treatment of syphilis, in the 18th vol. of the *Edinburgh Medical and Surgical Journal*, candidly states at page 590, that secondary symptoms occurred in a greater proportion under this treatment, than after that by mercury; yet he assures us, that these affections are of a milder and more tractable nature. In the practice of Staff-Surgeon Murray, Mr. Evans of the 57th regiment, and Mr. Brown of the staff-corps of cavalry, the proportion of secondary symptoms to the whole number of cases has been about a tenth. Mr. Guthrie, Deputy Inspector of Military Hospitals, now a surgeon in extensive practice in London, in a paper published in the 8th vol. of the *Medico-Chirurgical Transactions of London*, makes the following observations at page 508: "The fact I have stated, as to the non-occurrence of secondary symptoms in regimental hospitals, where all doubtful cases were treated by mercury, is so positive, that I am certain no regimental surgeon of ability will be found to contradict it. That they did sometimes occur is true, but it was only when the troops were moving, and under irregular management, that they were numerous, and then only in the general hospitals, where all the stragglers, and all the bad and protracted cases are collected. In the half year ending the 24th June, near 1400 cases of primary symptoms were treated in the army in France by mercury, and in this period only 14 cases of secondary symptoms occurred." And in another place he states, "in six regiments in one district in England, 521 cases were treated in fifteen months by mercury, and ten cases of secondary symptoms appeared; so that the true average proportion is 1 in 75."

Notwithstanding these statements, it is evident there are no data on which any calculation can safely be made respecting the proportion of secondary symptoms succeeding to either plan of treatment. Some practitioners call every eruption on the skin, and slight relaxation of the throat, and rheumatic pains, secondary symptoms. Others place only the worst description of such cases under the denomination; which circumstances I have often witnessed, both on the part of mercurialists, and anti-mercurialists. A great majority of the cases of eruptions and sore throats, occurring under both systems of treatment, are generally to be attributed to affections of the stomach and bowels, produced by the remedies employed in peculiar constitutions; and that they should



more frequently occur under the usual plan adopted by the anti-mercurialists, is not to be wondered at. No means are more likely to weaken the functions of the stomach and bowels, and indeed the actions of the whole system, than the long continued confinement to bed, the use of slops, and drenching patients with two or three pounds of the decoction of sarsaparilla daily. Such treatment will enable us to account very well for the longer period required to heal sores upon the anti-mercurial plan, than the other. On many occasions, chancres of long standing have healed immediately, upon allowing patients solid food, and a little wine or porter, sometimes with, sometimes without, a few blue pills.

In former days, when large quantities of mercury were given, and persisted in for a long period of time, secondary symptoms were far more frequent than at present; and in calculating the benefit derived from the labors of the non-mercurialists, they are fairly entitled to the credit of the remarkable change which has taken place, as well as of shewing that secondary symptoms do not occur nearly so often as was imagined; that they are rarely dangerous, and may be cured, perhaps not so speedily, but quite as effectually, without mercury as with it.

A curious fact may be mentioned respecting the black wash, which applies equally to all other mercurial applications. Some years ago, when I was carrying on investigations respecting the comparative advantages of the different modes of treating syphilis, I was surprised to find, on visiting the Hospital in the Castle of Edinburgh, that the primary sores were healed in a much shorter space of time than in my Hospital at Leith Fort, although I had two advantages which they did not enjoy, viz. a less crowded hospital, and men, generally speaking, of stronger constitution. Upon expressing my surprise at this circumstance, I was asked by one of the medical officers if I used the black wash, for that they had found it the most effectual application. My reply was, that I had not considered it fair to use any mercurial preparation whatever, when endeavoring to ascertain the effects of the non-mercurial plan of treatment; but I resolved after that to try it. Accordingly, the black wash was prepared, and the first subjects to whom it were applied were two men, who had been upwards of thirty days in hospital, without any amendment of the sores. On the seventh day, the healing process was observed in the sores in both cases; but one of the men asked me to allow him porridge instead of his bread, which he could not eat on account of the state of his teeth. Next day he made the same request, and begged me to look at his mouth; the state of the gums, and the fetor of the breath, announced the effects of mercury upon the system, which attracted my attention, and induced me to examine the mouth of the other man, who was in another ward; he was found to be in the same state, but slighter in degree. On the next public day, I returned to the Castle, and announced the circumstance before Dr. Thomson, and a considerable number of other gentlemen, who said it must have been accidental, and that it had never been observed in their Hospital. It was readily granted on my



part that it might be accidental, but that it certainly deserved attention, having occurred in two consecutive cases. Salivation never having been observed in the castle was no argument, because I had no doubt the event had never been looked for, and perhaps would never have been observed by me, had not one of the patients asked for a change of diet. We soon went up stairs into the wards; the gums of some patients were examined, who were using the black wash, and two of them were observed to be under the influence of mercury, one most decidedly, and the other slightly. It was then calculated, that the hundred-thousandth part of a grain of mercury could not have been received in the system, by means of the application of the black wash to such a small extent of surface. My answer to which was, that the calculation was merely a guess, and that it was immaterial to the point at issue, how small or how large a quantity would affect the system.

At the same time I was attending a young lady, who had a small sore of the nature of lupus upon the nose, to which the black wash was applied, out of the same bottle from which the two men had been supplied. On the ninth day, she complained of her mouth being very sore, and of having a copperish taste; and upon examination, the gums were found to be swollen, spongy, and inflamed, the breath having the mercurial odour. Since that period I have applied the black wash to many cases of ail descriptions of ulcers on the penis, and in two thirds of these some degree of soreness in the mouth has been produced, with considerable mercurial fetor, in the space of from the fifth to the tenth day. In all these cases, the sores healed more rapidly than in the remaining third; and a circumstance, worthy of being mentioned, has been observed,—that from the moment the sores began to cicatrize, the effects of the mercury upon the mouth declined, although the application of the black wash was continued; and in some, for the sake of experiment, it was persevered in for fourteen days, notwithstanding which the mercurial effects disappeared.

*Treatment of buboes.*—When inflammation of the glands in the groin is first observed, the patient should be advised to use no exercise; and, if possible, confine himself to bed, more particularly if he shew any of the appearances of a bad constitution, or even temporary bad habit of body. If there be much redness and pain, leeches should be applied, succeeded by a poultice, or warm fomentations; and sure am I, that should suppuration eventually follow, it will be much less extensive than if leeches had not been used. The matter, in the event of suppuration, should be let out as soon as possible, by means of a moderately sized puncture with a lancet as the best means of diminishing the suffering of the patient, and preventing bad ulcers, and extensive sinuses. A plan has been proposed of opening buboes by means of caustic; but experience obliges me to condemn such round-about surgical practice. Should the parts not shew a disposition to heal, much benefit is often derived from pressure, and also from the application of the solution of the sulphate of zinc, or nitrate of silver; indeed the edges of the incision

sometimes require to be touched with the latter in substance. A generous diet is necessary, and the occasional use of wine is frequently found advantageous

TREATMENT OF SECONDARY SYMPTOMS OF SYPHILIS.

1. *Sore throat*.—This form of secondary symptoms is to be treated upon general principles. From the effects produced in a great number of cases, I cannot speak too highly of the external application of leeches and blisters, when the inflammation and swelling in the throat are considerable, and when the ulcers are active and irritable; but under other circumstances, a solution of the nitrate of silver, in the proportion of six grains to the ounce of distilled water, is to be applied by means of a hair pencil to each ulcer. In this case the functions of the stomach should be carefully attended to by regulation of the diet, and the use of gentle laxatives, combined either with the sulphate of iron, or sulphate of quinine. I have hitherto seen no case which has not speedily yielded under this treatment.

2. *Eruptions*.—It has already been mentioned, that almost every form of known eruptions has been classed among the secondary symptoms of syphilis. They are to be treated upon general principles, so fully detailed in a former part of this work; but in intractable cases, marked benefit will be found to follow the use of the alcoholic solution of corrosive sublimate.

3. *Nodes*.—In insipient cases in which the pain is severe, the frequent application of leeches to the part affected will be of great service, followed by that of blisters; and here again I have to observe, that decided advantages will result in a majority of cases, from the use of the corrosive sublimate, aided by the vapour bath, opiates, and perfect rest. When the bones come to be extensively diseased or carious, surgical treatment must be had recourse to.

I shall conclude this subject by stating certain deductions at which I have arrived, not only from my own personal observation, but also from a careful consideration of all the facts which have been laid before the profession respecting the treatment of syphilis.

1. That mercury is as certain a poison as arsenic only it is not so quick in its operation upon the system.

2. That, like many other poisons, it is found useful in the cure and alleviation of many diseased states of the constitution, when employed with caution, and within certain limits, which can never be defined to suit all constitutions.

3. That it will cure syphilitic diseases, when used judiciously, not by any specific effects which it is been long erroneously supposed to possess in these diseases, but from its having the power of altering or modifying diseased actions, both local and general, improving the state of the secretions, and thereby disposing sores to heal; but when carried beyond a certain point, which can never be defined, mercury produces a disease of its own, always more difficult to cure than the primary one for which it was employed.

4. That all kinds of syphilitic ulcers on the parts of generation, including the true Hunterian chancre, may be cured without the intervention of mercurial preparations, upon the simple plan of treatment above described.

5. That the secondary symptoms do not succeed the non-mercurial plan of treatment in nearly such a great proportion as was apprehended, and as is still asserted by some of the mercurialists; and that when they do occur, they are generally mild, unattended by danger, (which cannot be said of those produced by over-doses of mercury,) and cannot be cured in a great number of cases without the use of mercury.

6. It would appear to be established by all the medical evidence which I have had an opportunity of examining, that all the primary forms of syphilis are more speedily cured by a judicious use of mercury, than by the non-mercurial plan of treatment.

It is with much pleasure that I can refer my readers, for most valuable information, to an able work on syphilis, by S. M. Titley, M. D. of London.

## CHAP. VII.

### DISEASES OF THE LABIA, AND EXTERNAL PARTS, IN THE FEMALE.

---

#### PHLEGMON.

THE labia are liable to inflammation and its consequences, not only from their situation, but likewise from acid discharges, &c. Ulceration and phlegmon are two of these effects, but the remarks already made when treating of syphilis, are equally applicable to all ulcers on the labia, and render it unnecessary to say more upon the subject; I shall therefore proceed to treat of phlegmon, which may occur at any period of life, sometimes as the consequence of external injury; at others, it occurs spontaneously, as phlegmon does in other parts of the body.

*Symptoms of phlegmon.*—The disease is known by the existence of heat, pain, swelling, and throbbing, and more or less general fever. From the looseness of texture of the part, the progress of the disease to suppuration is generally rapid, in which case the pain is more severe; but in other instances, the disease comes on more gradually, the part continues long hard, and the pain is sub-acute. The terminations are the same as in phlegmonous inflammation in other parts of the body, suppuration being, however, the most frequent; owing, no doubt, to a natural feeling of delicacy, which prevents females from making such complaints known till the disease is far advanced.

*Treatment of phlegmon.*—There can be no doubt respecting the advantages to be derived from the application of leeches early in the disease. I object to cold lotions, because I doubt much if they ever prevent suppuration, although they may certainly retard the disease; warm fomentations and poultices will be found far more efficacious. From the depending position of the parts, and the increase of pain produced by motion, the patient should be confined to bed. The bowels are to be kept open, and the pain moderated by large opiates. Suppuration sometimes takes place in the course of the second day, and as soon as matter is discovered, it should be evacuated by puncture with the lancet; but there is no necessity for making a large incision, provided the abscess be opened in a depending part. From observing, that when left to itself, the abscess opens on the inner surface of the labia, I generally make the



puncture in that situation. It is not good practice to introduce a tent, but pressure should be applied by means of sufficient compresses, and a T bandage.

Mortification ought to be a very rare termination; but I have seen two cases where sloughing took place, with great loss of substance, in consequence of neglect and bad management.

#### PECULIAR AFFECTION OF THE PUDENDUM, OCCURRING IN YOUNG SUBJECTS.

In the year 1815, the attention of the profession was directed to the history of a very fatal affection of the pudendum of female children, by Mr. Kinder Wood, Surgeon in Oldham, now in Manchester. Of this affection he had seen twelve cases before he wrote his paper in the 7th vol. of the *Medico-Chirurgical Transactions*, London. The patients were from one to six years of age; only two recovered. The complaint commences, according to Mr. Wood, "with chilliness, succeeded by heat; slight pain in the head; dullness; nausea; loss of appetite, and thirst; the tongue has a clay-coloured deposit; the bowels are torpid; and the patient is languid, inert, and listless. These symptoms precede the affection of the pudendum about three days. When the genital organs are examined, one or both labia are found inflamed and enlarged; the inflammation is of a dark tint, and soon extends internally over the clitoris, nymphæ, and hymen, and a thin secretion, which at this period may be observed coming from these parts, renders it not improbable that the lower part of the vagina may be affected." In a dissection at which I was present with Mr. Cheyne and Dr. Combe of Leith, and which was also attended by Professor Bene and his son from Hungary, when on a tour in this country, the inflammation, which terminated in mortification, had extended high up in the vagina.

Ulcerations soon take place, generally of a bad character, having a dirty yellow appearance. In Mr. Wood's cases the discharge was peculiarly offensive, copious, irritating the adjacent parts, and contributing to extend the disease along the perineum to the anus, and to the inner part of the top of the thigh, contiguous to the labia. He has also seen the inflammation spread over the *mons veneris*, and succeeded by deep ulcerations, progressively extending as long as life continued. "The pulse (says Mr. Wood,) is quick and irritable after the inflammation commences, and as the ulceration extends, the face becomes of a peculiar pallid hue, the skin having a very singular whiteness, which I have never seen absent after the ulcerations had formed. The stools are slimy and offensive; and in two or three cases, I have seen aphthæ spread extensively around the anus, and over the perinæum. The ulcerations in this affection are not of an equal depth or appearance, but various in this respect, as well as in the state of the bottom, which, in some places, is foul as well as deep, in others superficial, and sprinkled with small red granulations." Mr. Wood further states, that in his cases, the pain on motion was excessive, and that retention of urine, with its usual concomitants, formed an important train of symptoms. The course of the disease does not appear to occupy any regular period, but "from the time that the

ulcerative action is completely established, the enlarged labia diminish, and the redness disappears, the ulcer successively extending over parts which had been inflamed. The character of the disease at this time is that of a deep, foul, and spreading ulcer, upon parts weakened by a peculiar inflammation, and a constitution injured and weakened by previous febrile symptoms. The external organs of generation are now progressively destroyed; the peculiar pallor of the countenance increases; the pulse becomes quick and weak; the appetite fails; the bowels become loose; the skin of the thighs hangs loose and flabby as in marasmus; the discharge from the parts increases, and becomes more and more offensive, till the patient is worn out and expires." But in the cases which I have seen, the progress was different; the ulcerations were not extensive, and the external swelling and dark red-colour continued to the last, and in two cases even after death.

The duration of this curious affection is various: "In one case, the patient got better in twenty-three days, in another in seventeen days; but it is not possible to say what may be the duration of a fatal disease, this depending on many circumstances of violence, constitution, &c. When the ulceration is deep and extensive, I have never seen the patient recover." Mr. Wood presumes that this affection bears a much stronger similarity to infantile erysipelas than to any other disease.

The first case of this affection which fell under my observation, occurred several years ago in my dispensary practice. The patient, a girl of six years of age, when recovering from measles, during the progress of which there had been great gastro-intestinal irritation and diarrhœa, was seized with the disease of the pudendum, and died in the course of eight days. Every effort was made to obtain permission to examine the body, without success, but I saw sufficient to convince me that the child died, not so much from the effects of the external disease, as from inflammation, and perhaps ulceration, of the mucous membrane of the bowels. Some time afterwards, I was asked by Dr. Moffit of the 7th Hussars, to see a child labouring under the disease at Piershill Barracks; she was also attacked with it immediately after the recession of the eruption in measles, which had been mild, but attended with diarrhœa. The external inflammation, pain, and swelling of the pudendum were fully as great as in the former case, and bore such a strong resemblance in its external characters, that any one would have readily recognized the affection from a drawing in my port-folio. The child recovered under the use of poultices and fomentations, and the exhibition of gentle laxatives. Since then, two fatal cases have occurred in Edinburgh, and the appearances on dissection were such as to confirm the opinion I had previously entertained,—the mucous membrane of the bowels displaying extensive vascularity and ulceration, particularly in the ileum. In one of the cases, the ulcerations were numerous and extensive; and in the other, the mucous membrane was found thickened and spongy in many places, and in the usual progress towards ulceration, which would have certainly taken place had the child lived a few days longer.

It would appear that Dr. Ferriar of Manchester, was familiar with this affection, for he states, in his excellent work, entitled "*Medical Histories and Reflections*," that he had "met with several instances of putrid fevers in young girls, accompanied with broad maculæ on the body and limbs, *and a gangrenous state of the labia pudendi*. The parts were greatly tumefied and extremely painful. It was a very fatal complaint." (p. 169.)

*Treatment.*—Mr. Wood remarks, that the first part of the treatment is to move the sluggish bowels with calomel and rhubarb; the affected part should be frequently washed with the liquor plumbi acetatis dilutus slightly warmed, and poultices made of the same liquor applied. As soon as the ulcerative action is commenced, he considers it necessary to have recourse to bark in decoction, to which he commonly added confect. aromat. with tinct. calumb. and small doses of tinctura opii, together with a moderate allowance of red wine. When the tumefaction and redness were diminished, and the ulceration stationary, he applied the ungt. oxyd. plumb. alb. and found it very useful. When the bowels become loose, he found the elict. minos. catechu of excellent service, and he gave the bark in substance when it could be borne.

According to the views which I have been led to form, besides the local treatment recommended above, such means ought to be taken as will cure inflammation and ulceration of the mucous membrane of the bowels, which have been so fully described in another part of this work.

## CHAP. VIII.

### INFLAMMATION OF THE TESTES.

---

INFLAMMATION of these organs is sometimes produced by external injury, or it occurs spontaneously in the course of gonorrhœa, particularly the virulent form, and also during the cure of stricture in the urethra by the bougie. It was formerly called *hernia humoralis*, from mistaken notions, by the humoural pathologists. The inflammation may either attack the part called epididymis, and spread from thence to the body of the testicle, or the latter may be originally and solely affected. When the body of the testicle is inflamed, the pain is very severe, extending along the cord, which, in some cases, is also involved in the disease; and occasionally great uneasiness is felt in the lumbar region. The pain is increased by pressure, motion, and also when the body is in the erect position; the swelling is sometimes very great, and the scrotum, frequently reddened and tender. I have seen both organs affected simultaneously; but this is rare, the inflammation generally attacking only one at a time. When the epididymis is alone affected, the pain is seldom much complained of, and the constitutional symptoms are slight; whereas in the other, there are sometimes high febrile symptoms, and very frequently nausea, with a disposition to faint.

*Treatment of inflammation of the testes.*—The horizontal posture in bed must be insisted on, and the part is to be properly supported; if the disease be produced by external injury, and be not severe, these precautions, together with the employment of laxatives, a strictly antiphlogistic regimen, and the application of warm fomentations, will suffice. In more severe cases, the internal exhibition of antimony as a contra-stimulant is necessary, with perhaps local bleeding, which is much better effected by opening one of the superficial veins on the surface of the scrotum with a lancet, than by the application of leeches, which are tedious, often troublesome, and on some occasions exceedingly inconvenient, particularly when secrecy is required. When a vein in the scrotum is opened, the patient should be standing, as the blood will not flow in the recumbent posture; so that when we wish to stop the discharge, we have nothing to do but to make him lie down. In very severe cases, however, where the swelling is great, the pain severe, and the febrile



symptoms high, one general bleeding will be necessary. This proves beneficial by unloading the system, and particularly the part, of blood, and by giving an effectual, perhaps a permanent check to the diseased action. I find it very serviceable in the decline of the acute stage of the disease, and particularly should there be pain in the course of the spermatic cord, to apply a small blister on the lower part of the abdomen in the course of the two vessels. After the inflammation has subsided, and if any hardness remain, the use of frictions with mercurial ointment, containing a portion of camphor, will be serviceable and a suspensory bandage must be worn for some time.

When the inflammation of the testes depends upon inflammation or irritation in the urethra, the same plan of treatment is to be had recourse to, in addition to such means as may be necessary for the removal of the latter affection, and which have been formerly mentioned. Should it seem to be produced by the use of the bougie, it must be abandoned for some time, and when recourse is again had to it, a smaller-sized instrument may be used, with additional gentleness and caution. In the treatment of this disease, I always feel anxious, not only to mitigate the patient's present sufferings, but to employ such means as will prevent any subsequent hardness. I scarcely ever met with an instance of scirrhus of the testicle, which has not been attributed by the patient to some previous injury.

## CHAP. IX.

### DISEASES OF THE UTERUS CONNECTED WITH INFLAMMATORY ACTION.

---

IN this chapter I shall treat of the following diseases:—1. Inflammation of the Uterus after delivery.—2. Inflammation of the Os and Cervix Uteri in the ordinary state of the system.—3. Vascular Sarcoma, Scirrhus, and Cancer of the Uterus.

#### INFLAMMATION OF THE UTERUS AFTER DELIVERY.

THIS disease has been termed metritis, which implies the existence of inflammation of the *substance* of the uterus. Comparatively speaking, it is rare, and we meet perhaps with more than fifty cases of inflammation of the peritoneal covering of the uterus, and its appendages, for one of this disease. I have met with it only in two instances within the last few years,—one of which was owing, as far as could be ascertained, to long-continued injurious pressure which the uterus sustained in a case of difficult labour, occasioned by the diminished capacity of the pelvis, and the large size of the head of the child;—the other was a very complicated case, occasioned by rough treatment during labour, and in the extraction of the placenta; the bladder in this case was allowed to remain distended from Sunday till the following Friday. Several relapses took place, attended with pain in the region of the uterus, enlargement of that organ, ascertained by internal, as well as external examination. After many months of suffering and hectic fever, it was suspected that the uterus contained a fluid, and that the channel through the os and cervix uteri was obliterated. Upon the probability of this opinion, a small steel bougie was gradually introduced through the os uteri, when a discharge of about two ounces of fetid pus took place, with a large quantity of air. From this time the bad symptoms disappeared, the recovery was rapid, and menstruation took place in a few weeks subsequent to the operation.

In a very severe puerperal epidemic, which prevailed at Vienna in the months of July and August, 1819, it is stated that the substance of the uterus was always affected; but upon examining the dissection reports, I can find only two such instances out of fifty-six. In the epidemic which occurred in the Maternité of Paris in the year 1829, the uterus is represented as having been diseased in one hundred and sixty-five cases and in twenty-nine instances was alone affected.

Not being familiar with the disease myself, I must take the liberty of drawing a description from the work of Mr. Burns of Glasgow, who describes it as appearing under two forms. The first takes place within the ninth day after delivery, with all the symptoms of ephemera, with a dull heavy pain in the lower part of the belly, which is neither constant, nor much felt, unless when the patient sits up, or when considerable pressure is made with the hand; but occasionally a darting pain takes place through the uterine region. The state of the lochia, of the milk, the pulse, and bowels, are said to be various. A discharge of blood like the menstrual is said to be critical, as well as the occurrence of free perspiration, and diarrhœa. The treatment consists in exciting early and free perspiration, fomenting the belly, and opening the bowels. Few cases are said to require the use of the lancet or of blisters.

The second form is said to be more serious from the intensity of the inflammation: it commences between the second and the fifth day after delivery, but may take place at a later period. The pain in the lower part of the belly is severe, increased upon pressure, and the uterus is to be distinctly felt harder and larger than usual; there is, however, no general swelling of the abdomen or tension, unless the peritoneum be affected; sometimes nausea and vomiting take place. The pulse very soon becomes frequent and somewhat hard, the tongue white and dry, and the urine scanty and high-coloured. The lochial discharge is early suppressed, and the secretion of milk is diminished or destroyed.

Like the other form, this may terminate favourably by some critical discharge, but in many cases, the result is represented to be less fortunate;—the febrile symptoms and the pain continue, the pulse becomes more frequent, rigors take place. a throbbing of the part is felt, symptoms of hectic ensue, the patient spends sleepless nights, and is drenched in perspiration.

“After some time (says Mr. Burns) matter is discharged from the vagina, or by the bladder, or rectum.” “Pus is contained often in the ovaria, and tubes, and sinuses of the uterus. Mortification is an extremely rare termination. This is a fact, of which my dissections convince me, and it is farther confirmed by the opinion of Dr. Clarke. Little or no serous effusion takes place into the abdomen.” (Page 426.)

I strongly suspect that Mr. Burns has confounded this complaint with four others,—viz. suppression of the lochia, peritonitis, disease of the mucous membrane of the bladder, and an affection of the colon and rectum. The symptoms occasioned by suppression of the lochia, peritonitis, and metritis, bear such a strong resemblance to each other as occasionally to defy all diagnostic distinctions. The pain in peritonitis is sometimes as dull as that represented in metritis. The general description which Mr. Burns has given of the appearance found on dissection is very vague, but in detailing the symptoms of metritis, he states, that “matter is discharged from the vagina, or bladder, or rectum, but oftenest from the rectum.” I would here take the

liberty to observe, that although matter is discharged from the vagina, it may not have proceeded from the uterus; but if discharged from the bladder, or rectum, these, it appears to me, would be rather round-about ways for the matter to take from the uterus, unless false passages have been made by instruments rashly used, or by ulceration. Mortification, instead of being a rare occurrence, as stated by Mr. Burns, would be a very frequent termination, if the inflammation affected the muscular structure of the uterus. The existence of pus in the ovaria and tubes is very usually found in puerperal peritonitis; the assertion of the existence of pus in the sinuses of the uterus is vague, as it may be coagulable lymph, which is so often discovered in veins.

The remedies which Mr. Burns recommends in the second form, are the early and free use of the lancet, mild laxatives, fomentations, embrocations, and sinapisms. The best internal remedy we can employ, he says, is saline julep, with antimonial wine and laudanum. Emollient and anodyne enemata afford relief. After suppuration has taken place, he recommends open bowels, light nourishment, fomentations, and anodynes. After the matter is discharged, removal to the country and tonic medicines are useful.

#### INFLAMMATION OF THE OS AND CERVIX UTERI IN THE ORDINARY STATE OF THE SYSTEM.

Experience has convinced me, that inflammation of the os and cervix uteri occurs more frequently than is generally imagined; that it is the cause of much distress to females, by producing diseased states of the menstrual discharge, and other complaints, more particularly ulceration, as well as scirrhus and cancerous affections. As the disease falls to be so often mentioned in the following pages, I shall now give a description of its symptoms, appearances, and terminations.

This disease may take place after exposure to cold, fatigue, or fright, and it is sometimes ushered in with chilliness followed by some degree of fever, with a sense of fulness, weight, heat, and pain in the proper region, and also in the back and loins—the severity of these symptoms depending upon the intensity and extent of the inflammation; in general, however, the inflammation is sub-acute, with corresponding mild symptoms. In the acute cases, the rectum appears to suffer, at least tenesmus takes place, and the patient experiences increased suffering when at stool, and occasionally there is also micturition. The worst instances that have fallen under my notice, were connected with diseased states of menstruation, both as cause and effect. In most cases there is an increased discharge from the vagina, resembling the leucorrhœal; frequently it is of a sanguineous nature, and when examined, is found partly fluid and partly coagulated. When the discharge is copious, the pain in the back is generally severe.

In all serious diseases of the uterus, it is necessary to make a careful examination of the state of parts, not only by the vagina, but also by the rectum.



On reaching the os uteri, in acute cases, a considerable increase of pain will be produced by the touch, and will be very much complained of every time the finger is made to press upon the organ, which feels hot and swollen; and I have often been aware, during such examinations, of the pulsation of minute arteries. Sometimes I have discovered one or more large vesicles which feel like minute tubercles; and also ulcerations, particularly on the posterior lip. In sub-acute cases, the patient complains of slight increase of pain upon making an examination, the uterus feels heavy, and the lips of the os uteri swollen and doughy.

*Treatment of inflammation of the os and cervix uteri.*—Venæsection is occasionally necessary in stout, plethoric women, but in general the application of a sufficient number of leeches to the labia, or to the inguinal regions, repeated according to circumstances, will be found to answer better. On the Continent, the application of leeches to the immediate seat of the disease is recommended, and is particularly insisted upon by French writers. Formerly I entertained strong prejudices against this practice, which a trial, urged by the recommendation of my friend Dr. Farquharson, who resided for many years at Lisbon, completely removed. The leeches are put into an ivory tube, furnished with a piston, and introduced so that the extremity reaches the top of the vagina. The piston is then pushed forward. The leeches in general fasten immediately, and become filled in the course of a few minutes, when they make their escape. The patient is to sit upon a pot containing boiling water, to encourage the bleeding, which is readily suppressed upon lying in the horizontal posture. The bowels are to be acted upon by the mildest laxatives, assisted by injections of tepid water, care being taken that the nozzle of the pipe be not pushed against the diseased part. As soon as the bowels are in a proper state, anodynes may be used, and are found most efficacious when introduced into the rectum. The diet should be more or less antiphlogistic, according to circumstances. Rest in the horizontal posture is to be enjoined, until considerable amendment has taken place; and the warm hip-bath seems to be serviceable in all cases where there is no considerable hæmorrhage. I have seen counter-irritation produced either by the tartar-emetic ointment, rubbed upon the lower part of the belly, or by means of a small blister to the sacrum, beneficial.

Individuals who have had an attack of this disease, are ever afterwards liable to a return of it; therefore great attention should be paid to the bowels, and to preserve the feet sufficiently warm; they should wear drawers, and never be without a napkin, or a T bandage made of flannel.

When an ulcer is discovered, it should make little difference in the treatment, further than to make us perhaps a little more active, and more peremptory in insisting upon the necessity of keeping the horizontal posture. In such cases, injections, at first of warm milk and water, and afterwards of any of the usual astringents, repeated several times a-day, are necessary. In one case in which I was successful in arresting the progress of, and subsequently healing, a

large ulceration on the lip of the os uteri, I had an opportunity about eight months afterwards of examining the condition of the part on dissection, the patient having eventually died of phthisis pulmonalis. There was considerable loss of substance, but the cicatrization was complete, and there was no surrounding hardness.

#### VASCULAR SARCOMA, SCIRRHUS, AND CANCER OF THE UTERUS.

By vascular sarcoma of the uterus, I mean an increased growth of that organ, by a deposition of organized matter similar to its natural structure, and possessing its fibrous appearance. In all the cases which I have seen, the disease seemed to advance with symptoms shewing increased action, if not inflammation itself,—such as general febrile movement; pain increased on pressure; general tenderness of the part: tumefaction of the abdomen, which has been always observed to be left more and more enlarged after the subsidence of every attack. These symptoms recur at irregular periods, with intervals of one, two, or more months. The natural functions do not appear to be much disturbed, except during the inflammatory paroxysms; in general the appetite is good, but there is much thirst; digestion goes on well, at least for a considerable period, and the bowels are not more impeded than can be very well accounted for by the mechanical pressure; the stools generally have a natural appearance; and the menstrual discharge, in many, continues to flow, but sometimes in increased quantity, so as to resemble active hæmorrhage. The uterus sometimes grows to an immense size, if the disease advance slowly. I once had an interesting case of this affection under my care, in which, upon dissection, the uterus, weighed above fifty pounds avoirdupois, which is perhaps the most extreme instance on record, particularly in which life was preserved so long under the circumstances, for the tumour filled not only the abdomen, but pushed the diaphragm so high, that it encroached upon the thorax, and lay over the heart and lungs, so as to conceal the respiratory sound over the whole anterior part of the chest. So high did it reach, that the diaphragm on the right side came in contact with the first rib; the lungs were found reduced to about a third of their natural size; and although the heart was perhaps rather larger than natural, it was flattened by the pressure it had sustained.

On cutting into a uterus affected with vascular sarcoma, there is observed not only a resemblance to the natural structure, but an absence of those white lines which characterize scirrhus; and there is nothing like ulceration. The disease has no resemblance to tubercles of the uterus, which are circumscribed, and seem like knobs projecting from its surface, or embedded in its substance. In vascular sarcoma, it is impossible to point out where the proper structure of the uterus terminates, or the diseased structure commences; the surface of the organ is generally even, and wants the hard indurated feel of scirrhus. Women affected with this disease may die at last from the effects of peritonitis, phthisis pulmonalis, or of some cerebral affection, instances of all of which

I have known; and in some cases the uterus has been found, upon dissection, very much enlarged from this disease, where little, and in others, no suspicion was entertained of organic disease. This, I apprehend, can hardly happen in scirrhus or cancer.

*Treatment of vascular sarcoma of the uterus.*—In the gravid condition of the uterus, fresh matter is deposited by its arteries, so as to increase its bulk and weight in a remarkable manner, but is again absorbed after delivery; and from the analogy which exists between vascular sarcoma and the great increase in the substance of the uterus during gravidity, it is probable that the preparations of iodine, by exciting the action of the absorbent system, will be found successful in its treatment. The iodine may be exhibited either in the form of tincture, or combined with potash, forming the hydriodate of potash; of the former, ten drops may be given three times a-day, gradually increasing the dose to thirty,—of the ordinary solution of the latter, thirty drops increased to sixty; and either of these preparations may be also applied externally in the form of ointment. I have never seen any of the bad consequences from the use of iodine, concerning which so much has been written, and I have employed it very frequently, and continued it for months. The application of leeches,—contra-irritation in the pelvic region,—a rigidly abstemious and dry diet,—careful attention to the bowels,—and the avoiding exercise, particularly towards the menstrual periods, are all collateral means which are highly necessary, and must not be neglected.

I cannot resist stating the effects of the above-mentioned treatment, in the case of a lady, who, having for some months observed a tumour the size of the bottom of a Florence flask, above the brim of the pelvis, rapidly increasing, both in size and weight, and bearing down in the passages; she mentioned her situation to her friends, who advised medical assistance to be called which was done accordingly. After a large quantity of iodine had been used without any effect, I was consulted, and found an enlargement, not only above the brim of the pelvis, but also filling up its cavity, producing constipation and micturition, from the pressure upon the rectum and bladder. I gave an unfavourable opinion, but added that there was a possibility of checking the activity of the disease, and the further enlargement of the tumour, at least for some years. There never was a case which better illustrated the advantages of the combined influence of the treatment already mentioned: leeches and counter-irritation were employed, in addition to the external and internal use of iodine; an immediate effect upon the activity of the disease manifested itself; from this time the tumour began to diminish. When I first saw her, she was the size of a woman in the fifth month of pregnancy. In the course of three months the tumour could not be felt by external examination, and at the termination of seven, the treatment was discontinued, as she ceased to feel any inconvenience, except a slight degree of weight in the passages. I have had an opportunity of seeing this patient several times since, and am assured that she feels nothing of her former disease, and that



she menstruates regularly. No examination of the parts has been made since the treatment was discontinued, at which time, however, the uterus was found much reduced in size.

There are two interesting cases, showing the success of the iodine treatment in uterine tumours, published by Dr. Baron, and respecting which I find an article in the *Med.-Chirur. Review* for August 1829.

#### SCIRRHUS AND CANCER OF THE UTERUS.

As these affections are so frequently combined, and as scirrhus so often terminates in open cancer, I shall treat of them together; although I am aware that one species of cancerous ulceration may take place from the immediate effects of inflammatory action of the parts, without the intermediate condition of the scirrhus degeneration. These are diseases which generally show themselves about the period when menstruation ceases in the course of nature, while vascular sarcoma usually affects those who are younger; but the most active cancer may occur in females under thirty years of age, several instances of which I have myself attended. Women seem to be more liable than men to scirrhus and cancer, which are the most dreadful and intractable diseases to which they are subject. It is the general belief, that the disease first commences in the cervix of the uterus. At first there is a slight uneasiness in the part, with glairy discharge, and a sensation which is attributed to weakness or weariness, in the lumbar region; in the course of some time, heat and itching about the vagina take place, with thirst, some degree of fever during the night, and increased discharge, which at this period is slightly discoloured, having rather a disagreeable odour; these too last circumstances are the first to create alarm, and induce the patient to seek for medical advice. As the disease advances, the pain becomes more severe, burning and stinging; the discharge more and more foul and fetid, sometimes alternating, however, with large evacuations of a limpid serous fluid; the palms of the hands, and soles of the feet, feel as if scorched, with great restlessness and thirst, particularly during the night. The stomach becomes at times very irritable, so that nothing can for a time restrain the tendency to vomit; the pulse is rapid; the surface either harsh and dry, or bedewed with perspiration; and there is very frequently a deadly paleness, not only of the countenance, but pervading the whole body. Sometimes active hæmorrhage takes place from the passages, which no doubt proceeds from some vessels, the coats of which are ulcerated.

The ulceration is sometimes confined to the cervix and os uteri, and upper part of the vagina; at others, it extends to every part of the organ, as well as the vagina, affecting the rectum and the bladder, through the coats of which it extends; but more frequently the disease involves the rectum, so much so, that I have several preparations in my museum, where perforations are to be seen, not only between the rectum and the vagina, but also between the rectum and the uterus.



The duration of the disease is very various; in some cases it runs through its course in between two and three months; in other instances, when the scirrhus degeneration precedes the cancerous, the course of the disease may occupy years. Sometimes the patient dies a lingering and painful death, the fatal termination being attributed to the gradual decay of strength, by the joint effects of the constitutional irritation, pain, want of sleep, and inanition; at others, peritonitis takes place suddenly, and hurries the patient quickly to her grave.

*Treatment of scirrhus and cancer of the uterus.*—It is to be apprehended that these degenerations have been too often allowed to run through their course, without sufficient means having been taken to subdue them, or to arrest their progress, from the prevailing opinion of their utter hopelessness. But I am not singular in believing, that, although not perhaps eureable, much may be done to arrest their progress for many years, and at the same time to make the patient comfortable, provided the disease be attacked early by the means now to be described, which I can strongly recommend from experience. These are a dry, abstemious, but sufficiently nourishing diet; assiduous attention to the bowels, without producing purging, or intestinal irritation; strict confinement to the horizontal posture upon the occurrence of the slightest pain, and allowing gentle exercise to be taken only when no pain has been complained of for some time, and when the weather is fine. The body must be protected by sufficient clothing, and precautions taken to prevent the possibility of the feet becoming cold. A flannel T bandage should be worn; and upon the occurrence of the slightest pain, discharge, or febrile movement, the application of leeches is to be had recourse to, and repeated according to circumstances, followed by the production of contra-irritation, either by means of a blister to the sacrum, or antimony ointment to the lower part of the abdomen, together with the occasional use of the tepid bath.

An examination *per vaginam* should be made from time to time, in order to ascertain the condition of the parts affected; and we are to form an opinion along with the other circumstances mentioned, from the size and weight of the uterus, but particularly from the state of the os uteri. It is always a bad sign if it be found more and more gaping and ragged, and if increased pain and hæmorrhage be produced by the touch.

In the advanced stages of the disease, we are often implored to relieve the distress occasioned by the pain, intractable vomiting, restlessness, and want of sleep; and sometimes, I am sorry to say, we are applied to in vain; for the stomach is either too irritable to retain any medicine, or the opiate which is given reproduces in a few hours the irritability of the stomach, or creates a rending headache. Thus we are often placed in the most afflicting position, sometimes blamed for not being able to relieve the present sufferings of the patient, or for having created, by our remedies, sensations which are less endurable than those for which they were prescribed, so that we are often

obliged to run through the whole list of narcotics. I have sometimes found one, sometimes another, serviceable in allaying pain; but upon the whole, more benefit is derived from small doses of the sedative solution of opium thrown into the rectum, than from any other. Care should be taken not to administer one single drop more than is necessary to subdue pain, because the smallest additional quantity will be quite sufficient to excite vomiting, or violent headache. I generally begin therefore with from five to ten drops, gradually increasing the dose, as the system gets habituated to the remedy. Much comfort will be produced by the administration of pills, containing equal parts of camphor and hyosciamus, but more particularly when there is irritation of the bladder or much nervous irritability.

The sickness and vomiting are generally more difficult to allay than the pain. All known remedies have sometimes failed in my hands, but more success has followed the administration of a pill composed of two or three grains of calomel and two of opium, with a small blister, or a plaster composed of spices mixed with opium, applied to the epigastric region, than any other means.

In almost all cases where the disease is far advanced, the patient suffers much loathsome feeling from the bad odour of the discharge, which, in many instances, excites or aggravates the irritability of the stomach, and it often requires a strong sense of duty or great affection to sit long at the bed-side. It therefore becomes a very important object to remedy this evil, which we can now do most effectually by throwing injections into the passages, containing the chloruret of lime, or of soda properly diluted in water, and repeated several times during the twenty-four hours, as well as by sprinkling these substances over the room and bed.

## CHAP. X.

### PROLAPSUS OF THE UTERUS—RETROVERSION OF THE UTERUS—POLYPUS OF THE VAGINA AND UTERUS.

---

#### PROLAPSUS OF THE UTERUS.

THIS affection may exist in various degrees, from the slightest relaxation to the complete expulsion of the uterus beyond the external parts, when the disease is termed *procidentia*. The slighter forms of this disease are not easily discovered; but when it exists in a greater degree, a sense of weariness, and pain in the back, is complained of, together with a dragging sensation; the patient feels as if something were coming out of the external parts; and there is usually some discharge like leucorrhœa. As the disease advances, the bladder, from its connexion with the vagina and uterus, becomes affected and displaced, micturition is produced, and sometimes stranguary. It should also be recollected, that the more the uterus is protruded, in the same ratio must the vagina be everted; and it is generally remarked, that should a woman affected with prolapsus of the uterus become pregnant, the uterus, instead of being pressed lower down by its increased weight, rises in the abdomen as usual; so that it is more difficult to feel the os uteri at the seventh month, than in the unimpregnated state; but I have seen several cases where the disease became aggravated as pregnancy advanced.

*Causes of prolapsus of the uterus.*—The chief cause is getting up too soon after delivery, or even sitting up in the half erect posture, before the uterus is reduced in size; but I have known the affection to be very troublesome in the virgin state in relaxed habits. Constipation and bearing-down efforts, together with lifting heavy weights, and using any exertion during the time of the menstrual discharge, are also causes of prolapsus.

*Treatment of prolapsus of the uterus.*—The horizontal posture, avoiding every exertion, and keeping the bowels open, are the chief means to be recommended, together with the daily use of cold water to the parts, and an astringent injection, composed either of the sulphates of alumina and zinc, lime-water, or a decoction of oak-bark. In extreme cases, an instrument called a pessary, is to be introduced into the vagina, in order to support the parts.

Should the uterus be found already protruded beyond the external parts, in the state which is called *proidentia*, it is almost always possible to produce reduction by attention to the bowels, after persisting in the horizontal posture for several days, and by employing long-continued pressure with the hand on the protruded part, so as to deprive it of blood; after it is pushed within the parts, it must be retained by a pessary.

## RETROVERSION OF THE UTERUS.

This is a complaint which takes place in the first month of pregnancy, and in which the fundus of the gravid uterus is tilted backwards out of its natural situation, and becomes wedged under the great promontory of the sacrum, the os uteri projecting towards the symphysis of the pubis, where it frequently presses upon the urethra, or neck of the bladder, as does the fundus of the uterus upon the rectum as it passes down along the sacrum. The symptoms are more or less violent, and consist of bearing-down pains, with uneasiness, and feeling of weight in the passage, and pain in the belly, partly perhaps from distension of the intestine, but principally from distension of the bladder, which may be felt above the brim of the pelvis. Generally no urine is passed from the bladder; and although there is frequent desire, no satisfactory evacuation takes place from the bowels. There are usually febrile symptoms, and considerable restlessness.

*Causes of retroversion of the uterus.*—Although it is a disease of pregnancy, yet I have known it to take place in the unimpregnated state; but in which cases the uterus was rendered preternaturally large by menstrual obstruction. Constipation and distension of the bladder co-existing, is the chief cause of retroversion of the uterus, assisted perhaps at the moment by some unusual exertion, or efforts when at stool.

*Treatment of retroversion of the uterus.*—I have seen some very curious, but unpardonable mistakes made by practitioners not being able to detect this complaint. If once recognized, which it can only be by examination made in both passages, the treatment is simple, and generally very satisfactory. The chief points to be attended to are, to evacuate the contents of the bladder and the rectum; the first is easily effected by the introduction of the catheter; but it should be known and remembered, that the more the female bladder is distended, the more does the urethra become elongated, so much so, that I am aware of the particulars of a case that terminated fatally, owing to this circumstance; and in which the ordinary female catheter did not reach the bladder, which created a belief that it was empty, and threw the practitioners off their guard. Upon dissection, the bladder was found enormously distended, producing peritoneal inflammation, which was the cause of death. The uterus was found in between the third and fourth month of pregnancy in a retroverted state. The actual preparation of the bladder and uterus, and a drawing of the relative situation of parts, by the master hand of Sir Charles Bell, are in my museum.



Considerable address is sometimes required, after the contents of the bladder are discharged, to clear out the intestines. Castor oil should be given, and some hours afterwards, an injection of tepid water should be thrown into the bowels; but the rectum is so tender, and the obstruction so great, from the pressure of the fundus of the uterus, that this simple operation cannot be trusted to ordinary hands; it must therefore be done by the practitioner himself, in the following manner: the patient being placed upon her knees leaning forward, the pipe, well greased, is to be slowly introduced, with the point properly directed along the hollow of the sacrum, when the fluid is to be gradually thrown in. In former days, attempts used to be made to place the parts *in situ*, by introducing two fingers into the rectum, and forcibly pressing forward the fundus of the uterus; but this practice is now seldom employed, at least for some days, and practitioners in the mean time content themselves with keeping the bowels open, and relieving the bladder. Fomentations are serviceable in relieving pain, as are opiates, after the bowels have been freely opened. General bleeding may sometimes, though rarely, be necessary; but it is, at least, safe practice to draw blood, if there be much pain in the abdomen and pelvis, with tenderness to the touch, and particularly if the pulse be full, quick, and hard. It must not be forgotten, that abortion may take place, which is to be managed in the usual manner, and as far as I know, there is only one case on record, which occurred to Dr. Merri-man, where there is good evidence of the uterus in this situation carrying on its contents till the full period.

#### POLYPOUS TUMOURS OF THE VAGINA AND UTERUS.

Tumours of this class are often met with in practice; for the most part, their structure is hard, and they are covered by an elongation of the mucous membrane of the part from whence they have arisen; sometimes, although rarely, they are soft and lymphatic, resembling those found in the nose. No age is exempt from them, although they are not so frequently met with in very young subjects; sometimes they are found attached to the vagina, but generally spring from some part of the uterus, and may be attached either by a broad base or by a narrow pedicle; but the latter is the most common, particularly after the tumour has been expelled from the uterus. Uterine polypi may grow from any part of the uterus, of which some fine examples may be seen in my museum, in one of which a small tumour of this description, of a bright red colour, is seen projecting from the Fallopian tube. Most generally, however, polypi arise from the *cervix uteri*.

The constitutional symptoms are similar to those produced by other diseases of the uterine system: these are, loss of general health and strength, dyspeptic symptoms, and irregularity of bowels. When uneasiness, and a dragging sensation low down in the back, with bearing-down pains, and micturition, are complained of, particularly if attended by discharge, some suspicion of uterine disease is naturally excited; but it is only by an exami-

nation that the nature of it can be detected, and then only when the tumour is either totally or partially expelled through the os uteri: considerable mystery will otherwise hang over the nature of the disease. The discharge is at first mucous, subsequently it becomes tinged, and at last, altogether bloody; the bleeding is at times copious, and is supposed to proceed from the rupture of considerable-sized veins. As soon as a polypous tumour in the uterus gains some degree of size, its mechanical pressure produces a sense of weight and uneasiness in the passages, even should it be situated in the vagina; but if in the uterus, there will be frequent, and sometimes severe pain, which, although partly owing to the same cause, is to be principally attributed to contractions of the uterus, which have all the characters of those observed during abortion in the early stages of pregnancy. Under such circumstances, the discharge is considerable, which together with the constant paroxysms of pain, want of rest, failure of the appetite, &c. weaken the patient; hectic fever will ensue, and the patient may die from the effects of long-continued constitutional irritation, or from ex-sanguinity or debility. The tumours are said sometimes to ulcerate, and to send forth excrescences, but of this I have not seen any example. On examination with the finger, it is of great moment to be able to distinguish between different diseases which resemble polypus, particularly prolapsus and retroversion of the uterus, and perhaps also steatomatous tumours, which are sometimes formed between the rectum and vagina. A polypus is in general not tender to the touch, although it must be remembered that the vagina, which embraces it, may be in that state; and the depending part is generally the largest, at the extremity of which nothing like an os uteri can be felt. Upon tracing with the finger for the origin of the tumour, we shall either come to its attachment in the vagina, and distinguish the uterus higher up, or if it should spring from the uterus, we shall be able to detect the os uteri encircling it like a ring; and in order to prevent any chance of mistake, we should make a point of tracing the whole circle which the os uteri makes. I can scarcely fancy how retroversion of the uterus can be mistaken for this affection, because, in that case, the uterus will be tender to the touch, and the os uteri discovered projecting towards the symphysis of the pubis, with the fundus directed towards the hollow of the sacrum. Tumours situated in the recto-vaginal septum may be easily distinguished by making an examination by the rectum, as well as the vagina. I have heard of one case which occurred in London, and which made a considerable noise at the time, where an eminent surgeon most unaccountably mistook a relaxed and prolapsed bladder for a polypous tumour, and it was with great difficulty he was restrained from applying a ligature. Every man in the profession, whether a physician or surgeon, should be able to distinguish between such diseases by the usual mode of examination, although it may be well, before proceeding to any operation, to be sanctioned by the authority of an accoucheur. The necessity of medical men directing their attention to the diseases of the uterine system in a

proper manner, is well illustrated by the following case :—A young woman, aged 25, a widow, and the mother of two children, was operated upon by me for polypus in the winter of 1825. This woman's complaints had continued for two years, during which time she had been affected with increasing pain in her back and loins, frequent desire to make water, and a leucorrhœal discharge, with frequent hæmorrhage, which created great debility. The functions of the stomach became affected early in the disease, and the bowels were sometimes constipated, sometimes too loose. For some months she complained of cough, attended by expectoration, which was sometimes bloody. She had taken every remedy in the pharmacopœia to restrain the hæmorrhage, and had been frequently bled upon the same principle that venæsection is had recourse to in epistaxis, but, as might be expected, without any benefit. At this juncture she fortunately consulted Dr. Duffin, now of London, who was led to make an examination, when he discovered the presence of a polypus. I was consulted, and immediately performed the operation, by including the tumour within a ligature in Dr. Duffin's presence. The tumour separated on the fourteenth day, and was found to have a very broad base. Leeches were applied to the abdomen several times before the tumour dropped off, in consequence of symptoms denoting peritoneal inflammation; but the woman made a good recovery, menstruated soon after, all the unpleasant symptoms quickly vanished, and she has ever since enjoyed excellent health.

*Treatment of polypus.*—The sooner a ligature is applied the better, and there is no operation more easily performed, if the double canula of Levret be used, the tubes of which instrument may be separated at pleasure. A hempen ligature well waxed is preferable to a silver wire, which, on one occasion, after I had applied it, gave way on the eighth day, and required to be renewed. The ligature should, in general, be made tight from the first, but should there be much pain experienced in attempting to do so, the pressure had better be produced very gradually. Before the operation, the bowels should be brought into a proper state, and after the application of the ligature, the patient should be watched, in order that any inflammatory action either of the uterus or peritoneum may be speedily attacked, and subdued by venæsection or leeching. Opiates are also serviceable to allay pain and produce sleep.

## CHAP. XI.

### TUBERCLES OF THE UTERUS—BONEY CONCRETIONS—HYDATIDS—AQUEOUS AND FLATULENT DISCHARGES.

---

#### TUBERCLES OF THE UTERUS.

THE diseased formation which generally bears this name, is not the scrofulous tubercle which is so frequently found in the lungs, mesentery, and almost all other tissues of the body. The tubercles of the uterus are hard, generally spherical-shaped masses, sometimes imbedded in the centre of the substance of the uterus,—projecting into its cavity,—or from its external surface; in the one case, the projecting part is covered by the mucous membrane, in the other by the peritoneum. They have also other characters which distinguish them from the scrofulous tubercle, being fleshy, and more or less vascular, whereas the others have not the slightest carneous appearance; and I have never been able, even after minute injection, to see a single vessel in their substance. Suppuration is unknown, and ulceration does not take place, except in a few instances where the tubercle possesses a bad character. There is as much doubt, however, respecting the pathology of tubercles of the uterus, as of those which are found in the lungs. Some suppose it is a disease of the cellular substance; while others allege it depends upon that of the proper muscular fibres of the uterus; and there are many who attribute this diseased formation to inflammatory action. On making sections in a great number of cases of tubercles of the uterus, I find that some consist of a hard cartilaginous shell, containing an almost transparent fluid; others seem semi-cartilaginous throughout, and show white shining lines running like radicles in every direction, intersecting each other, the interstices apparently containing the proper substance of the uterus; some appear to be minute vesicles, or small sacs containing a fluid, occasionally giving somewhat of a honeycomb appearance; other tubercles approach very near to the nature of bone; while a few bear an exact resemblance in every respect to the proper substance of the uterus. These tubercles are found of various sizes, from that of a pea to a goose's egg, and even larger; they may be either solitary, or exist in considerable



numbers, so as to encroach upon the cavity of the abdomen, and occasionally give to the uterus a grotesque appearance, making its cavity, from the os uteri to the fundus, long and winding.

The symptoms produced by tubercles of the uterus depend very much upon their character and size ; generally speaking, the former is not of a malignant nature, and if not, few or no constitutional symptoms will arise, at least for a considerable period of time ; but if malignant, the symptoms will resemble those of scirrhus and cancer ; when large, they produce mechanical pressure upon neighbouring parts, and give rise to corresponding symptoms, both local and constitutional ; the local symptoms are tenesmus, constipation, desire to make water, and pain in making it, weight and bearing-down in the passages. Menstruation is regular, at least in most cases ; but occasionally the performance of this function is attended with difficulty and pain ; in several instances where the state of parts was afterwards ascertained by dissection, I observed menstruation to be more copious than usual, with shorter intervals between the periods.

*Treatment of tubercles.*—Little more can be done than to palliate symptoms as they arise, prevent constipation, and mitigate irritation of the bladder and uterus, should it exist. Hereafter, perhaps, it may be found, that the action of iodine is more efficacious in tubercular disease of the uterus, than in any other, except vascular sarcoma.

#### BONEY CONCRETIONS.

Boney or earthy concretions in the uterus, are by no means rare ; several undoubted specimens of which are in my museum ; they are of different sizes, and exist, as far as I am aware, solitary ; their surface is generally rough, being intersected with fissures and indentations ; they are commonly more or less of a spherical shape ; and the presence of such bodies in the uterus may be expected to give rise to general and local irritation. In one case, a substance of this sort was found after death in the uterus of a woman, who had been long subject to uterine irritation and hysteria, and who at last fell a victim to phthisis pulmonalis. Another woman, after having been delivered of a healthy child, appeared to be doing well for twenty-four hours, when pains like those of a second labour took place, which induced a belief that a twin was coming into the world ; this, however, was not the case, something hard was felt passing through the os uteri, which, in the course of a few hours, was expelled during a violent paroxysm of pain, and was found to be a calculus of the description now under consideration : the woman did well, and had no return of the complaint. Another preparation about the size of a turkey's egg has been lately presented to me by a medical friend in Stirlingshire, with the following history : an unmarried woman consulted him about an uterine affection, attended with enlargement of the abdomen, and other symptoms which led him to suspect that she might be pregnant, the possibility of which she admitted. At the termination of a year, or somewhat more, she actually

entered into the holy state of matrimony, and became in the course of time "as women wish to be who love their lords." She went on to the full period; strong uterine action came on; a hard, unyielding substance was felt at the os uteri, which was expelled before the child, and was found to be the calculus sent to me. The child was born alive, and the woman made a good recovery.

Considerable dubiety must always exist in such cases; the calculus can only be discovered by introducing the finger, or a sound into the os uteri; but even from such an examination we shall possibly derive little additional light, as it must not be supposed that the calculus, when touched with the sound, will produce the same sensations as those emitted on touching a stone in the bladder, uterine calculi being coated with a thin layer of a substance as soft as boiled cartilage.

*Treatment.*—We have to allay general and local irritation, as in other uterine diseases. Mr. Burns has given references to several interesting cases of this kind, and, among others, to a case mentioned by Gaubius, where the affection was complicated with a prolapsed state of the uterus. After a considerable time a large stone was expelled by violent action of the uterus. On the next day a larger stone presented at the os uteri, which gradually dilated, and allowed it also to pass; and he states, that smaller stones were extracted from time to time, and the patient gradually got well. In the 1st Volume of *Le Journal des Savans*, a case is related by Beale, in which an incision was made into the uterus of a woman and a calculus extracted, which had existed for eight or nine years with insufferable pain, after which she recovered. At first the concretion weighed nearly 4 oz., but after it was dried it became very light for its size. Mr. Burns also tells us of a case of calculus occurring in a child of five years of age, who died in consequence of suppression of urine.\*

## HYDATIDS.

Hydatids are sometimes formed in the uterus; occasionally they are solitary, but for the most part are very numerous, being of various sizes, from that of small currants upwards, and attached to each other by a loose cellular-looking substance, which is probably coagulated lymph. The nature of these substances is not known, and the prevailing opinion, that they are produced by blighted conceptions, I cannot believe to be correct. The symptoms are such as are occasioned by any other cause of uterine irritation, and are accompanied by uterine efforts resembling labour-pains. If the true nature of the complaint were detected, which it can only be by a partial discharge of hydatids, it might be serviceable to introduce an instrument like a sound into the uterus, for the purpose of breaking them down, and loosening any adhesions which may exist between them and the uterus, and afterwards to exhibit an infusion of the ergot of rye, made with two drams of that substance

\* In a late dissection of an aged woman who died of cholera, the arteries of the uterus were ossified. The organ itself was in a state of extreme atrophy.

in four ounces of water, which, from the violent uterine action I have seen it induce in certain cases of lingering labour, I would expect to be very effectual in causing the expulsion of hydatids. I wish it to be understood, however, that I merely speak from analogy; and it must be remembered also, that while this remedy will be, at least, innocent in the case of hydatids, or any other soft substances contained in the uterine cavity, it might be fatal if used to produce the expulsion of a boney concretion. Local and constitutional irritation must be relieved by the means already recommended, and after the discharge of the hydatids has taken place, every measure must be used to re-establish the general health.

#### AQUEOUS AND FLATULENT DISCHARGES.

Both of these affections, but particularly the first, frequently attend hydatids, as also scirrhus and cancerous affections of the uterus and vagina, and more particularly the cauliflower excrescence. I was lately consulted about a young married woman, the mother of three children, respecting a very copious discharge of watery fluid which took place from the vagina, alternating with leucorrhœa: she menstruated regularly, and during these times the aqueous discharge did not take place. On examination, I found the uterus rather bulky, and there were several small tubercles on one of the lips of the os uteri, but neither pain on pressing it nor gaping of its lips; the vagina felt much relaxed. In this case, there were considerable flabbiness of person, and weakness of habit, which I attempted to improve; but as I could neither persuade the lady to take medicines, nor, in fact, to do any thing which she was desired, I gave up attending; and have no doubt, that in the course of time a scirrhus affection of the uterus will take place, the seeds of which already exist, but which might have been warded off by proper treatment.

The discharge of flatus from the vagina, I have most frequently remarked soon after delivery; it speedily wears off, and rarely continues to be a source of annoyance beyond a week or ten days. This affection very seldom presents itself in other states of the system, but cases have been known to occur. I have heard of two instances where ladies have been obliged, in consequence of irregular and loud explosions entirely beyond their controul, to seclude themselves from society,—an unnecessary restraint, because such occurrences may be prevented by wearing a small canula in the passages.

In the flatulent, as well as in the aqueous discharge, which does not depend on cancer, the complaints, I conceive, may be altogether removed by means taken to improve and invigorate the general health,—such as, proper regimen, cold or warm bathing, and attention to the bowels. Considerable benefit will also be derived from throwing astringent injections into the passages twice or thrice a-day.

## CHAP. XII.

### FLUOR ALBUS AND LEUCORRHŒA.

---

CONSIDERABLE difference of opinion exists in the minds of the profession respecting the application of these terms:—some use them synonymously: others apply the term *fluor albus* to designate the existence of a white discharge from the passages, which is unattended by any marked constitutional symptoms, and which they suppose to proceed from the vessels of the vagina; but give the name of *leucorrhœa* to the discharge when it is opaque, and when the general health is much involved; under which circumstances they conceive the secretion to take place from the uterus itself.

The mucous membrane lining the uterus and vagina is constantly bedewed with a mucus secreted by its vessels, which in the healthy state of parts is merely sufficient to keep the surface moist; but it very frequently happens, from various causes, that this fluid is poured out in superabundant quantity, which is then discharged from the passages, and has commonly obtained the name of “Whites.” It affects females of all ages, and frequently attacks even infants. It is a disease respecting which medical men are seldom consulted, unless the patient suffer pain, or the discharge be excessive, occasioning general debility, and perhaps producing excoriation of the parts.

Considering the one to be an advanced stage of the other, I shall treat of both under the general term *leucorrhœa*, without reference to the colour, quantity, or seat of the discharge.

*Symptoms of leucorrhœa.*—Patients for the most part complain of a sense of weakness, weight, and very often severe pain in the back, attended by a discharge of glairy transparent mucus in considerable quantity, having the appearance of new made thin starch, which, however, sometimes looks milky and opaque. The discharge and constant pain, sooner or later, produce debility and impaired health; the functions of the stomach and bowels become impeded, the abdomen full, often much distended by flatulence; the countenance in time assumes a pale and pasty appearance; the lips lose their colour; the eyes their natural brilliancy; the extremities are cold during the day, and for some time after retiring to bed, when slight fever takes place, and they become burning with heat. Sooner or later, if the disease be not checked, palpitations occur, and the legs become anasarcaous. The head also suffers in most instances, the patient complaining of headache, and occasionally of vertigo.



These symptoms do not succeed each other rapidly in women of strong constitutions, in whom it usually takes a course of years; but in weakly habits, the disease is more rapid and severe in its consequences. The menses continue to flow very regularly in slight cases; and at these times the leucorrhœa generally disappears, but returns again as soon as the period is completed. Occasionally the menstrual discharge is much increased in quantity and is irregular in its periods; it also often happens that obstructions take place, and at the monthly times when a woman should be "unwell," the leucorrhœa is found greatly increased in quantity, and accompanied by more severe pains in the back and loins.

In addition to what has been above mentioned respecting the discharge, it may be stated, that it has sometimes a purulent appearance, and is occasionally tinged with blood; but when this happens, or when it becomes fetid, considerable apprehensions may be entertained respecting the condition of the uterus. In all such cases an examination *per vaginam* is absolutely necessary.

*Causes of leucorrhœa.*—Leucorrhœa very often takes place in full plethoric habits, and in women who are much exposed to heat; it may also occur in weak, emaciated subjects; and under both circumstances, may sometimes depend on increased action of the secreting vessels, approaching perhaps to inflammation. It may also be produced by causes which tend to weaken the action of these vessels, as frequent abortions, excessive venery, and long-continued exposure to cold and fatigue. It may be also occasioned by the presence of ascarides in the rectum,—by polypus, prolapsus, and other affections of the uterine system,—and also by scirrhus and cancer, which are to be suspected if the person be beyond the meridian of life, and the discharge be excessive, tinged, or fetid. Some constitutions are more prone to be affected in this manner than others; I cannot, however, point out any particular temperament, or personal appearance, which marks the susceptibility; but women are more frequently affected during pregnancy than at other periods, which may be well accounted for from the increased determination of blood to these parts. There can be no doubt that the unnatural, but, as it has been termed, refined manner of bringing up females in this country, also predisposes to it.

*Treatment of leucorrhœa.*—In all severe and suspicious cases, the practitioner should take an early opportunity of examining the state of parts, in order to be satisfied whether or not the discharge depends on organic disease; for if it do, he cannot confidently promise success from any remedial agents he may employ. Few diseases connected with discharges, from whatever part of the body they may proceed, should be hastily and rashly suppressed, or treated in any other manner than as constitutional affections. In leucorrhœa the remedies must be applied to the general system first, and not to the parts themselves, as if it were of local origin; the constitution, in fact, must be prepared, in the first instance, to do without the discharge.

However young and plethoric the patient may be, I cannot fancy a case which will require venæsection, unless there be some unusual circumstances

attending it, as very violent pain, and high constitutional excitement; but I have seen much advantage in weak as well as in strong subjects, from applying leeches to the groins, when harassed with constant uneasiness in the uterine region; the number of leeches is to be regulated by the condition of the patient—in some cases four will suffice, while in others a dozen may be required.

Plethora can be reduced much more effectually and permanently by a spare, dry, but sufficiently nourishing diet, and by acting upon the bowels, than by any other means. Regular but not violent exercise, should be recommended; and long walks are to be avoided, as well as every other cause which tends to produce fatigue. If the patient be weak, the diet should be more nourishing, the exercise less fatiguing, and wine may be allowed, or any other more palatable stimulant; but the stomach must never be over-distended, and the use of slops should be entirely discountenanced. Should there be any evidence of the existence of worms in the rectum, the usual remedies, particularly turpentine injections, must be employed to expel them. If the discharge depend upon diseased states of the uterine system, appropriate means must be employed. After these steps have been pursued for some time, perhaps for a week or ten days, remedies may be used to suppress the leucorrhœa.

The local remedies consist of different astringent injections thrown into the vagina, by means of an ordinary bag and pipe, or a womb syringe; these are usually composed of solutions of the sulphates of zinc, alumina, iron, copper, or the acetate of lead; or infusions of vegetable astringents, such as green tea, oak bark, or galls. They should be used at first weak, their strength being afterwards increased if necessary.

It has been strongly recommended by many authors, to use occasional emetics; I have accordingly exhibited them, but without any apparent good effect. A gentle mercurial course, cicuta, cantharides, the different resins and balsams, particularly copaiva and turpentine, have also been recommended, and are considered by some as specifics, together with cubebs, and electricity, which is made to pass through the pelvic region. There can be no doubt that considerable benefit has been derived from the employment of each of these means; therefore one may be had recourse to after another; but from my own observations, I may state, that better effects have followed the use of the acetate of lead, and the tincture of cantharides, than of any other remedies. An occasional opiate is serviceable for allaying irritation, and producing sleep. Women, particularly those in humble stations, are very fond of having recourse to strengthening plasters; but the same end,—viz. support to the back,—may be effected by proper stays or a flannel bandage, without the disagreeable circumstances resulting from the plaster. Tonics have also been recommended, as well as cold and warm bathing; to the occasional use of the former there can be no objection, and cold bathing in the open sea at the proper season, is often serviceable in cases where there is no disease of the uterine system, and the patient is not debilitated.

If the *os* and *cervix uteri* be found, upon examination, to be tender, swollen, or doughy,—if there be severe shooting pains in the pelvis or loins,—and if the discharge be of a milky whiteness, then we must certainly have recourse to the application of leeches, and to the use of the warm hip-bath, which should precede all other remedies

Women who are liable to leucorrhœa, should avoid violent exercise, and exposure to extremes of heat or cold; they should wear warm clothing, attend scrupulously to the state of their bowels, abstain from eating or drinking any article that is known to disagree with the stomach, and they should make a point of using the *bidet* at least twice a-day.

## CHAP. XIII.

### DISEASE OF MENSTRUATION.

---

UNDER this head I shall treat of five diseased conditions of Menstruation, which frequently present themselves in practice.

1. Amenorrhœa, or obstruction of the menses.
2. Dysmenorrhœa, or painful and difficult menstruation.
3. Immoderate flow of the menses.
4. Menorrhagia.
5. Circumstances occasionally attending the cessation of the menses

#### AMENORRHŒA.

Under this denomination are generally included retention of the menses and suppression; the former has also been termed *emansio mensesum*, and implies that the discharge has not appeared at the usual period of life; the latter denotes that the discharge has become suppressed, which may occur under two circumstances to be afterwards mentioned.

*Retention of the menses.*—This form of amenorrhœa becomes the subject of medical treatment only when a girl passes the usual period of life at which the discharge ought to occur, and when the constitution feels the want, which is evinced by the occurrence of a variety of symptoms, and the disorder of several functions. This time of life varies remarkably in different countries, occurring, it is believed, much earlier in hot than in cold regions; but even in the same climate, great differences are observed. The discharge ought to appear in connection with other signs denoting puberty; in temperate regions this happens about the age of fourteen; but even in this country I have known many instances at nine years, but a greater number in which the discharge had not appeared at eighteen.

The usual signs which denote constitutional suffering are the following:—The patient loses her natural liveliness, forsakes her usual amusements, and even neglects necessary employments in which she ought to be engaged. She is restless, peevish, and feels incapable of exercising her mind, or fixing her attention; complains of weariness, lassitude, and debility, and at the same time loses flesh. Her face becomes pale, and her skin sallow; she has either no appetite, or experiences unnatural cravings to eat indigestible matter, which at other times would create disgust—such as cinders, lime, chalk, and common earth. When these symptoms have continued for some time, dropsical



effusions occasionally take place, not only in the extremities, but also in the abdomen, although the distension of the latter generally arises from flatulence, which occasions great uneasiness to the patient, sometimes even amounting to pain; the belly becomes more swollen after meals, and particularly towards evening. The urine is either scanty or copious, and the bowels are torpid; it is difficult to keep the extremities in a natural state of heat; and when the feet are cold, headache is generally complained of; indeed it frequently takes place, whatever may be the condition of the extremities. Some patients become extremely apprehensive and anxious about their situation; while others have a melancholy appearance, and seem to care little about surrounding objects or themselves; and in some, anomalous hysterical affections appear. Cough and hurried respiration, if they have not already occurred, soon take place, together with expectoration. The bowels, which were formerly torpid, now perhaps become irritable and loose, and at length the patient is affected with perpetual diarrhœa, and hectic fever; and dies with all the appearance of phthisis pulmonalis.

This description is drawn from life, and is also an example of the disease called *chlorosis* in its worst form. Chlorosis, however, is not peculiar to the female, as several exquisite cases have fallen under my notice in young men about the age of puberty, and for the occurrence of which it is difficult to account, whereas in women it may be said to be excited by the want of a natural and periodical secretion.

In this form of amenorrhœa, the symptoms sometimes take a different course; cough and expectoration take place, with slow emaciation, the patient becoming better and worse for some years, the menstrual discharge, however, not appearing. and she dies at length of chronic phthisis, sometimes accompanied by ulceration of the bowels; at others, by disease of the liver. Tubercles are occasionally found in most organs of the body, and the immediate cause of death may be chronic peritonitis.

*Causes of retention of the menses.*—This form of amenorrhœa may depend, according to Mr. Burns and others, on a want of vigour in the system, by which not only a new action is prevented from being formed, but also those actions which were formerly performed become impaired; or on a special want of energy in the uterus; but in far the greatest number of instances, menstruation is postponed merely from the general debility of the system. Absence of the menses depends in some cases upon a malformation of the organs of generation, as want of the ovaria, imperfect formation of the uterus or of the Fallopian tubes, cohesions of the vagina and labia, or an imperforated state of the *os uteri*, or of the hymen.

*Treatment of retention of the menses.*—When a girl passes the usual period of life without menstruating, her friends naturally become anxious about her situation, and this of course increases; if her appearance denote loss of health, and more particularly should the symptoms be severe. When a medical man is called, his first duty is to inquire into the cause of the retention; but his

investigations will be incomplete, unless he make an examination, to ascertain if there be any malformation at the orifice, or in the course of the vagina, or at the *os uteri*. Notwithstanding this uncertainty, however, delicacy forbids such an examination, at least for a time, till other means have been tried in vain, and life be likely to pay the forfeit. It is evident also that the want of the ovaria, or imperfect formation of the tubes, and in some cases even of the uterus itself, cannot be discovered by examination.

The uterus may be perfectly well formed and healthy, but may want a certain something to enable it to commence the first of its peculiar functions; now this certain something, of which we really know nothing, has been denominated want of energy of the uterus itself; and we judge of it by the health being as yet good, and the constitution strong and vigorous; although the pain, restlessness, and other slight symptoms, show that this will not long be the case, unless something be done by art. The humoural pathologists, influenced by their peculiar views, recommended opening a vein in one of the lower extremities; and it may be often done with very great service. The best effects are sometimes produced in robust, plethoric habits, by taking a small quantity of blood at one, two, or three consecutive monthly periods: these monthly periods announce themselves every third or fourth week, by the aggravation of symptoms, and increased suffering of the patient. Instead of general bleeding, however, I now prefer the application of six, eight, or more leeches to the region of the groin, or in the neighbourhood of the vulva. The discharge of blood relieves the system, and gives the uterus time to prepare for the office it has to perform, and prevents the general health from becoming affected; while the discharge from that part of the body tends to excite some action in the uterus, which it is impossible to explain, and which may be produced either by unloading the vessels of the uterus, or by exciting a determination of blood towards it, and the other parts of generation. I am confident of the fact, although uncertain about the theory, having often observed the menstrual discharge appear out of its ordinary course, upon the application of leeches to the pelvic region or abdomen, when the attainment of no such object was in view. But on the other hand, it ought also to be mentioned here, that menorrhagia is often checked by the same means, which shall be mentioned more at large when treating of that disease. A good deal of the benefit derived from the application of leeches may be attributed to the effect of the bites produced upon the system at large. With respect to general and local bleeding, however, the strongest protest might be recorded against large and frequently repeated abstractions of blood from the system in this class of cases. It is the habit of some to take blood locally or generally upon every slight occasion, and upon the occurrence of every headache, difficulty of breathing, and anomalous hysterical symptom, till patients cannot pass a week without the operation, and at length the constitution becomes irretrievably ruined. Medicines, called *emenagogues*, have been long in use, but are now for the most part laid aside by practical men, who agree that they

are generally injurious. I cannot speak too highly, however, of the benefits to be expected from the use of *eantharides* in this and all other cases of diminished and obstructed menstrual discharge, commencing with doses of ten drops of the saturated tincture three times a-day, and gradually increasing the quantity to thirty, forty, and even sixty drops. Care should be taken, however, to give proper directions that the remedy be immediately suspended upon the occurrence of any irritation in the bladder or urethra, when camphor and hyosciamus should be exhibited, together with diluents, particularly lintseed-tea.

Constipation is not only to be prevented, but the bowels are to be daily and freely acted upon by aloetic pills, conjoined with *assafætida*, in case of pain from flatulent distension of the bowels. Aloes is preferable in this case to any other purgative, because it appears chiefly to act upon the rectum; care must be taken, however, that irritation of the rectum is neither too much nor too long excited, lest it produce piles. The hip-bath is a powerful remedy in this class of cases, and is to be used daily; it is preferable to the general hot-bath, from the increased heat which partial immersion will enable a patient to sustain. At first the water should be somewhat under 100°, but the temperature should be afterwards increased by the addition of more hot water, till it is as warm as the patient can well bear. The clothing must, in all cases, be adapted to the constitution of the patient and the season of the year, and cold feet avoided. The patient should be a great deal in the open air, taking such a degree of exercise as she can bear without fatigue; the exercise must be regular, however; and riding on horseback is particularly serviceable, as well as the use of a swing. Agreeable society, and every thing which can amuse the mind, are to be enjoined, but crowded and hot rooms must be avoided. The diet should be regulated according to circumstances;—if the patient be full and plethoric, it should be light, abstemious, and dry;—if weak, it should be more nourishing, but the stomach must never, on any account, be loaded. In neither case is the use of wine contra-indicated, unless there be fever or considerable local irritation.

Cold bathing in the open sea often produces very unpleasant consequences in all forms of amenorrhœa, although it may certainly be serviceable in a few cases. It is a remedy too frequently had recourse to, particularly in Scotland, for every malady, and too often receives undue countenance from medical practitioners, even of some degree of eminence. Frequently do I see cases of *phthisis pulmonalis*, asthma, dropsy, diseases of the uterus, &c. which, if not produced, are certainly aggravated, by sea-bathing. I scarcely ever have occasion to ride along the sea-side without being grieved at seeing poor emaciated children, in the last stage of *tabes mesenterica*, and other scrofulous affections, screaming and struggling while they are dipped. It may be mentioned once for in all this place, that when the system is much reduced, it cannot stand the abstraction of heat which is occasioned even by undressing in an exposed situation, such as a bathing machine, not to speak of that produced by complete immersion.



External frictions are very serviceable, particularly when performed with a horse-hair glove. Rubefacients, and even more severe counter-irritation, by means of mustard plasters, blisters, and antimonial ointment, are also found useful for relieving internal pains. A local stimulant is much employed in England, composed of one or two drams of the *aq. ammoniæ pur.* to twelve or sixteen ounces of warm milk or thin starch; three or four ounces of which are injected into the vagina four or five times daily.

The mechanical obstructions in the passages may be divided into two classes, viz. those occasioned by cohesion of the sides of the vagina or labia, and an imperforated hymen; and those caused by an imperfect or imperforated state of the *os uteri* itself. All these cases are comparatively rare, but few men can have been in extensive practice for twenty years without meeting with several, and therefore they require some notice in this place. In the first set of cases, in addition to the constitutional symptoms and local pain already mentioned, there is great fulness, distension, and a sense of weight in the passages, accompanied sometimes with severe pain, and a feeling of bursting; straining at stool and micturition; together with enlargement of the abdomen, which excites suspicion of pregnancy. The nature of the case can only be determined by examination, and can be relieved only by the knife.

In the second set of cases, there is greater difficulty in detecting the state of parts, from the natural impediment to an examination which exists at the orifice of the vagina, but I may mention, at least as a curious coincidence, that in the only two cases of imperforated *os uteri* which have fallen within my observation, there was no hymen, and the passages easily admitted the introduction of two fingers. In a third case of very imperfectly formed *os uteri* there was a hymen, but it offered no obstacle to the necessary examination. One of the former individuals would not submit to the *os uteri* being punctured, became perfectly exsanguined and chlorotic, affected with difficulty of breathing, cough, and expectoration, and died since the publication of the last edition. The other case I shall now relate: A young woman, aged 22, came from the country to consult Dr. J. A. Robertson, who sent her to me in the beginning of the winter 1826. The following particulars were collected from herself and a female friend who accompanied her. The menstrual discharge had not yet appeared; she had always been healthy till she reached the age of sixteen, from which period her health began to suffer, and since which she had regularly complained every month of pains in the back and loins, together with a sense of weight and bearing-down in the passages. For some time her sufferings were slight, and she was still able to perform her duties as a servant, but for the last two years she had become comparatively weakly and emaciated, not knowing what it was to enjoy a day's ease; and she stated, that she would readily submit to any thing which might cure her. The girl appeared to be above the middle stature, the *mammæ* were undeveloped, she was of an awkward shape, and indeed her appearance, colour of skin, and sound of voice, were rather masculine. Her abdomen was not tumid, but it



was stated to be occasionally swollen, particularly after meals. She seemed to be of a nervous temperament, and was exceedingly shy and timid. Upon examination, my fingers passed readily into the vagina, and the uterus was felt much lower than usual, but I could discover no orifice. Dr. Robertson had previously detected the same fact, but had not then communicated the circumstance to me, thinking he might be mistaken. The examinations were repeated many times, and after feeling the spot where the orifice ought to have been, which was distinguished by a small dimple, I attempted to introduce one of the smallest silver probes that could be made, but was unsuccessful in every attempt. It then occurred to me, that the malformation might be owing to an extension of the mucous membrane over the orifice, in which condition we sometimes see the urethra of a new-born male child. I determined upon giving her the chance of a cure, particularly as the means to be used would not certainly produce severe pain. Accordingly the sharp and triangular extremity of a silver probe was introduced, directed by the finger, and carried to the part above described, and a perforation made by employing a rotatory motion; the instrument was then withdrawn and the round point introduced, which then readily passed up to the fundus of the uterus. For several days she complained of slight pain, attended with some discharge of mucus, a little tinged here and there with bloody specks, and nothing further was done till the irritation had subsided. In about eight days the further dilatation was attempted, and perserved in daily, the size of the instrument being increased, till by the twelfth or thirteenth day I was able to introduce No. 6. male bougie to the fundus of the uterus. On the following day there was the appearance of so much irritation, both local and constitutional, that no further attempt was made. In two days afterwards she menstruated, and has been regular ever since, and suffers neither pain nor inconvenience. Her health and strength soon recruited, and in a short time her appearance became quite feminine. I saw her accidentally a few weeks before this article was written, and she is still in the enjoyment of good health.

In the case of amenorrhœa from imperfectly formed *os uteri*, the patient had at various times been afflicted with violent nervous symptoms; pain in the abdomen, sometimes of a distressing nature, and obstinate affections of the stomach and bowels; together with occasional retention of urine, and anomalous hysterical complaints. At every menstrual period she passed a little mucus, which was now and then slightly tinged, but had never the natural appearance, and it was always attended with great pain. After attaining the age of twenty-three, when her health was greatly impaired, and after she had tried all known remedies in vain, she most reluctantly, and after great delay, submitted to examination, and the *os uteri* was found so small as to be scarcely perceptible. She menstruated satisfactorily after several bougies had been passed through the *os uteri*, but I never succeeded in penetrating completely into the cavity of the uterus, either from an obstruction in the cervix, or from what appears to me to be more probable, a curvature of the

canal. Nevertheless, after dilating the passage as far as could be reached, (No. 7. bougie,) she menstruated naturally, freely and without pain, and her health became wonderfully improved. It is but fair to mention, however, that this case was also complicated with extensive constriction of the rectum, which, I fear, is not yet completely removed. Since the publication of the former edition several cases have occurred, the majority of which have terminated successfully.

Retention of the menses, arising from, or accompanied by general debility, must be treated by means adequate to restore the health and strength of the individual, in addition to the other remedies above mentioned.

*Suppression of the menses.*—The second variety of amenorrhœa is, suppression of the menstrual discharge, which may occur under two circumstances; either it may not return at the next expected period, or it may be suddenly checked during its flow, and this last has been termed “checked menstruation.” Women affected in this manner are said to be obstructed.

The first circumstance is one of the natural effects of pregnancy, and is sometimes produced by disease—for example, by general bad health; weakness caused by great loss of blood; long-continued fatigue; exposure to cold at the time the discharge was expected; improper food; excessive mucous discharges, as leucorrhœa; frequent abortion, which injures the healthy functions of the uterus; and also by various diseases of the uterus.

The second circumstance may also be produced by exposure to cold, but is often the immediate effect of violent mental passions. Grief has often this effect; and I have known it caused by excessive joy. Constipation must likewise be regarded as a cause, particularly of the first variety.

When the menses are suppressed, hæmorrhage frequently takes place from the lungs, stomach and nose; the abdomen becomes tumefied and painful, the mammæ are sometimes tense and painful; the tongue is generally foul; the appetite bad; and occasionally feverish symptoms take place.

*Treatment of suppression of the menses.*—In checked menstruation, I have seen the discharge brought back in twenty-four hours by proper treatment. If there be much vascular excitement, the lancet may be necessary in full, plethoric individuals; and the blood may be taken from the lower extremity, if a vein can be found conveniently situated; but upon the whole, leeches are preferable, applied to some part of the pelvic region. If the patient be not troubled with piles, two aloetic pills may be given every third or fourth hour, till the proper effect is produced, except in cases of excessive constipation, when milder remedies are to be had recourse to, assisted by large injections of tepid water. A case so complicated may require venæsection. The warm ammoniacal injection may at a subsequent period be thrown into the vagina; and the feet are to be bathed in very warm water, but the hip-bath will be found most beneficial.

When obstructions take place in debilitated constitutions, purging must not be carried too far; indeed, it may be mentioned as a general rule, that strong

physic should not be given under such circumstances ; but the bowels are to be kept gently open by suitable medicines, and particularly by mild injections. The patient should be allowed a nutritive diet, easy of digestion ; and a sufficient quantity of wine. or brandy if the former do not agree, will be found to be the best tonic ; but the diet, the exhibition of stimulants and tonics, should be regulated by the circumstances attending each particular case. If the stools show that the food is passed undigested, or if the tongue be furred, or be red and dry, animal food of any kind must be given with caution, and I think prohibited altogether when the tongue is in the conditions above described ; but there can be no objections to the use of wine in such circumstances, indeed it will in general be beneficial, unless it excite fever.

In many cases of derangement of health in females, a shower-bath taken immediately before dinner will be found serviceable, and may be used with warm or cold water according to circumstances, but generally the more a patient is debilitated, the warmer should the water be made ; the body should be afterwards well dried, and fresh garments put on. Exercise, and other remedies already so fully noticed, must be had recourse to. It may be further added, however, that preparations of iron are in great repute, and are well known to women under the name of "steel pills," "steel drops," &c. ; but I believe they have no specific effects ; should other remedies fail, however, it may be as well to try them.

It becomes a question how far the introduction of the bougie into the uterus may be applicable in obstinate cases of this kind, when other remedies have failed, and the general health has become affected. I have tried it in three bad cases : in two of these the menstrual discharge appeared soon after, in the third it completely failed ; but the first two cases are scarcely to be regarded as satisfactory, because other remedies were employed at the same time.

#### DYSMENORRHŒA, OR PAINFUL AND DIFFICULT MENSTRUATION.

Although in dysmenorrhœa the discharge is generally scanty, yet it is sometimes in natural quantity ; in some instances the discharge contains fibrous shreds, while in others a small organized mass, the shape of the cavity of the uterus, which in common language is called a "false conception," or a "mole," is thrown off.

A few days before the discharge is expected to appear, women affected with dysmenorrhœa begin to complain of pain, more or less severe and constant, in the back and loins, as well as in the pelvis ; at last a scanty discharge appears, attended with increasing pain and suffering. In investigating into the precise nature of these pains, they have been described to me in various ways, and as existing in various degrees, from a sense of weakness, weariness, weight, and tightness, to violent cramp, spasm, colic, and bearing-down, which last is sometimes so violent as to resemble the expulsive pains of labour, particularly when shreds of membrane are passed, and still more so when the



organized mass is expelled. The abdomen becomes swollen, sometimes tense; flatus may be heard moving from one convolution to another; the appetite is impaired; the bowels are constipated; the stomach is often irritable, sometimes affected with violent vomiting; the tongue is foul, and there are often febrile symptoms; the urine is sometimes suppressed, at others retention takes place. Some women suffer pain only during the first day, while others do so during the whole period.

Dysmenorrhœa sometimes takes place from the very commencement of menstrual life; or it is dated from the period of marriage; or after the birth of a child, generally speaking, the first child; lastly, it may take place at any period of life, and in such cases it is generally attributed to cold. The disease is of very common occurrence; much of the distress and bad health of females is owing to it, and many fall victims to consumption in consequence of diseased action being excited in the system by the periodical sufferings. These periodical sufferings, however slight at first, afterwards become more severe and of longer duration, so that at length some women are beginning only to recover from the effects of one period when the approach of the next is close at hand. At last, from the combined influence of the actual suffering during the periods, and the anxiety of mind during the intervals, the patient's health and strength are entirely destroyed. This would happen much more frequently and speedily than it actually does, only that females do not suffer with equal severity at every period; and the remark has often occurred to me, that after a very severe time, women escape once, and sometimes twice, with comparatively little uneasiness; but when the third period arrives, it is generally attended by very violent pain: this is more particularly the case when shreds of membrane and organized substances are discharged.

It has been generally remarked, that few women affected with dysmenorrhœa bear children, and it is described by all authors as a cause of barrenness. Mr. Burns makes the following statements when treating of the causes of sterility:—"The menses are either obstructed or sparing, or they are profuse or too frequent;" and again, "It is extremely rare for a woman to conceive, who does not menstruate regularly; and on the contrary, correct menstruation generally indicates a capability of impregnation on the part of the woman." Dr. Mason Good, when speaking of the sufferings of women affected with dysmenorrhœa, makes the following statement: "The frequent return of which embitters the life of the patient, and effectually prohibits all hope of a family." Dr. Denman supposed that no woman under such circumstances can conceive. There can be no doubt, however, that Dr. Denman was not quite correct in making this statement; but there can be little question of the fact, as already mentioned, that conception is rare.

Dysmenorrhœa has been observed in females under the most opposite conditions of the system, temperaments, and habits. Some are affected with hysterical symptoms, others not: but in all circumstances, the disease is represented by authors as most intractable; and indeed it is stated by one



and all of them, that the treatment consists in palliating symptoms during the period of suffering, and that "time, in general, removes the disease better than medicine, which is only to be advised for the relief of pain, weakness, or any other symptom which may attend or succeed to this state." Dr. Mason Good, in noticing the intractable nature of the affection, says, "The disease, moreover, is peculiarly obstinate, and in some instances has defied the best exertions of medical science, and has only yielded to time, and the natural cessation of the discharge."

*Pathological remarks respecting dysmenorrhœa.*—Dysmenorrhœa has been attributed to inflammatory action in the uterus, particularly when membranous and organized substances are discharged. These were proved by Dr. Hunter, and Dr. Baillie, to resemble the *membrana decidua*, formed by the lining membrane of the uterus immediately after conception. The disease has also been attributed to spasm; and loose and obscure hints are given in various works, of its dependence on organic affections of the uterine system. Thus Mr. Burns has observed, "If no *organic affection* can be discovered, and the whole appears to arise from spasm, we have only to trust to opium in the mean time, with such treatment in the intervals as the state of the system may point out." There are others who suppose that the disease is owing to a want of nervous energy in the uterine system—to constipation—or exposure to cold and damp.

It always appeared to me, that there might be some mechanical cause for dysmenorrhœa, but it was not till the year 1823, that I first entertained a belief it might be owing to the small size of the *os uteri*. In that year a medical friend presented me with a preparation of the uterus and its appendages, in which the *os uteri* was so small as scarcely to admit a hog's bristle. Since that period I have had many opportunities of investigating this interesting subject, and have now obtained many preparations taken from the bodies of individuals who died of different diseases, particularly of phthisis, and whose histories prove, that they had laboured under dysmenorrhœa from the very beginning of their menstrual lives. In these preparations of the uterus, the orifices, instead of being shaped like the mouth of the tench fish, are either circular, or nearly so, and some of them are so small as only to allow a bristle to pass; others are a little larger, admitting a small silver probe.

I am far from alleging, however, that dysmenorrhœa is *always* produced by a small *os uteri*; on the contrary, I believe it may occasionally depend on inflammation of the lining membrane of the uterus, as well as on inflammation in the substance of the cervix uteri, and on the encroachment of tumours diminishing the calibre of the passage through the cervix. But I maintain, that the condition of the *os uteri* above described accounts satisfactorily for many cases of dysmenorrhœa,—so far as my investigations have extended, I am inclined to say, it will account for the majority; although in candour I must mention, that one preparation in my possession appears to invalidate the evidence afforded by the others. In it, the mouth of the uterus is very small, and yet the woman to whom it belonged is stated to be the mother of

several children; she died in a public establishment, but the history of her menstrual life is unknown.

By this condition of the *os uteri*, not only are all the phenomena which take place in dysmenorrhœa most satisfactorily accounted for, but also the intractable nature of the disease, and the unsatisfactory result of every mode of treatment hitherto recommended. The menstrual discharge, after it is secreted in the uterus, cannot readily escape in consequence of the small size of its orifice; distension of the organ is the consequence, which, by exciting the contraction of its fibres, produces uneasiness and pain in the pelvic region. When the *os uteri* is very small, and the secretion viscid, or mixed with coagulated blood, shreds of membrane, or organized masses, then the distension becomes more considerable, and stronger contractions are excited. Sometimes the action of the abdominal muscles is called into play, and bearing-down or expulsive pains are produced, resembling in every particular the pains of labour, and continue till the expulsion takes place. Mr. Burns, in speaking of the disease, states that it “sometimes produces, *besides uterine pain*, spasmodic affection of the bowels, or *violent bearing-down efforts of the abdominal muscles*, as if it were intended to expel the womb itself.”

During these periodical attacks, inflammation of the lining membrane of the uterus, if it do not already exist, is sometimes excited, and in the end the sufferings occasion an entire break-up of the constitution. That dysmenorrhœa should be so intractable, and the action of remedies so very unsatisfactory as to render the disease an opprobrium to medical science, are not to be wondered at, if my views be hereafter found to be correct. Before I had any opportunity of putting these opinions to the test of experiment, they also appeared to me to be corroborated in a very striking manner by two circumstances:—1. By the action of the *ergot of rye*, which increases the force of the uterine contractions, quickly expelling the contents of that organ, thus in some cases shortening the patient's sufferings materially: 2. By the admitted fact which has been already mentioned, that women affected in this manner rarely, if ever, conceive. The small size of the *os uteri*, renders impregnation almost an impossibility, by offering a mechanical obstruction to the passage of the semen into the cavity of the uterus, which it is proved it must reach, by the accurate experiments of that ingenious and distinguished physiologist, Dr. Blundell of London, as well as by other facts which it is unnecessary to mention in this place.

These views appear to me to be further supported by several preparations in my museum. In one of these the cavity of the uterus is divided into two compartments, by a strong transverse adhesion. In a second, occlusion of the passage exists at the upper part of the cervix, with appearances of having been produced by the irritation of a polypous tumour; and in a third preparation, the *os uteri* became sealed up by inflammatory action. On dissection, the uterus in this last case was found enlarged, and contained about two ounces of puriform matter

*Treatment of dysmenorrhœa.*—After the facts and observations above mentioned were collected, my mind became occupied with devising the best means likely to cure the disease. Mechanical dilatation appeared to be the only remedy. I hesitated for some years to carry it into execution, or indeed to propose it, beyond mentioning it in my lectures, till the case of the young woman affected with amenorrhœa, noticed at page 647, presented itself in the year 1826. Since that period I have treated twenty cases of dysmenorrhœa, by dilating the *os uteri*, and have permanently cured eighteen of the patients; among these the two cases of amenorrhœa formerly mentioned are not included.

Of the eighteen successful cases, eight were either young unmarried women, or living in a state of widowhood; ten were married and living with their husbands. Of these ten, seven subsequently fell with child.

The instruments employed to produce the dilatation are the common metallic bougies, of different sizes from that of the ordinary small silver probe to No. 8 or 10. The operation is performed, (the patient lying in the position in which women are usually delivered in this country,) by introducing the forefinger of the left hand, till it reaches the *os uteri*, for the purpose of directing the instrument to the part, which is then to be gently insinuated by a rotatory motion, till it arrives at the fundus of the uterus. Much force ought not to be employed, and little or no pain is produced by the operation. The unpleasant consequences which sometimes take place in treating stricture of the urethra by similar means, viz. shivering, followed by fever, occurred in two instances; the fever, however, was slight, and soon terminated by copious perspiration; and in these, some days were allowed to elapse, before the instrument was again used. In two of the cases, the *os uteri* was sufficiently large, and well shaped; but the passage became so narrow in the course of the cervix of the uterus, that it required long-continued efforts before the smallest instrument could be introduced; but by perseverance the obstructions were at last removed, and the patients cured. In one of these last two, menstruation was performed without pain till after marriage, when dysmenorrhœa occurred. The other was a young unmarried woman, who menstruated with ease for several years, but after long exposure to cold and moisture, the menstrual discharge became for a time suppressed, and ever after was performed with pain. The late Dr. Kellie of Leith was also consulted about this case, and had I not been encouraged by his advice, I should not have attempted the operation; as on the posterior lip of the *os uteri*, several small elevations like incipient tubercles were felt. This woman called upon me eighteen months afterwards in good health, and stated, that she had not felt any uneasiness, or experienced any bad symptoms since the dilatation was effected.

A lady, the subject of one of the eighteen cases, was also perfectly healthy, and menstruated easily till the period of marriage; but her health became impaired soon after, in consequence of her monthly sufferings. On making an examination, an enlargement was discovered about half the size of a chesnut, on the posterior surface of the cervix of the uterus. I undertook the opera-



tion in consequence of the urgent entreaties of her friends, who happened accidentally to know of the happy results which had attended it in other cases, but little hope was offered of being able to do any good. Notwithstanding which a striking improvement in her health soon took place: and this in the end proved to be one of the most successful cases, for menstruation became easy, the tumour rapidly declined, and upon making an examination in about twelve months afterwards, it could scarcely be felt.

None of the women operated upon had suffered for a shorter period than two years; some for three or four; and others for ten. Of four of those who subsequently fell with child, one had been married between seven and eight years, and was reduced to a shadow from constant ailments; but after the operation, she recovered her health, strength, and flesh, and became pregnant at about the termination of nine months from the date at which the bougie was used for the last time. Another had been married three years, and had suffered considerably in constitution, with severe nervous symptoms every month, till at last she became entirely obstructed; and the abdomen being enlarged, I was consulted upon the supposition that she was five months gone with child. From some circumstances which it is unnecessary to mention, I entertained a suspicion that she had deceived herself; and upon making an examination, when she supposed herself to be in the seventh month, ascertained beyond all doubt that this was not the case. In the process of time, the operation was performed, and the passage completely dilated,—some months afterwards impregnation took place, and I have since delivered her of three children at separate births.

A third case is that of a lady who had been married two years, and who had had painful menstruation from the first appearance of the discharge; she was in a miserable state of health, had taken a great deal of medicine, but only with temporary relief. Impregnation took place after the third menstrual period subsequent to the dilatation.

The subject of the fourth case had also been affected from the first of her menstrual life, and laboured under the impression that she was therefore never to have a child. After dilating the passages with No. 6 bougie, menstruation took place with so much ease, that she supposed herself quite cured, and would not again submit to the operation. Several months afterwards, however, she felt a return of the pain, the operation was again had recourse to, and the dilatation carried as far as it could be effected with No. 10, which was accomplished two days before her expected period. Menstruation took place freely, and without the slightest uneasiness; she subsequently fell with child, and was delivered of a boy.

In cases of dysmenorrhœa, when this operation may not be expedient, the ordinary plan of treatment must be had recourse to,—viz. palliating symptoms by means of the hip-bath, attention to the diet, the due regulation of the bowels, and the occasional administration of opiates.

If the existence of inflammatory action be suspected in the lining mem-



bran of the uterus, or should there be much fever, it is safe practice to apply leeches to some part of the pelvic region, or cupping-glasses to the lower part of the back.

#### IMMODERATE FLOW OF THE MENSES.

Women sometimes menstruate more copiously than they usually do, so much so, that it appears more like a flooding than menstrual discharge; but the difference is easily known by the peculiar smell and appearance, and by its not coagulating like blood. This disease is, in general, confounded with hæmorrhage from the uterus, and the general term *menorrhagia* has been applied to both, either when separate or conjoined. I agree with Mr. Burns, however, in restricting the term *menorrhagia* to the discharge of pure blood from the uterus; but in order to be clear and precise in our language with respect to the combined case, we may then say that excessive menstruation is complicated with uterine hæmorrhage.

Many women menstruate more frequently and more copiously than others, and yet they cannot be said to be diseased, because it is natural to them. Therefore it is only to be considered as a disease under the following circumstances,—viz. when it is not habitual, and when it produces weakness or other unpleasant symptoms. Profuse menstrual discharge takes place in every variety of constitution and habit, but is observed more frequently in people of a debilitated, weakly, and relaxed frame of body, and in those whose occupations lead them to constant exposure to heat.

*Treatment of profuse menstruation.*—Medical men are seldom consulted in this affection, except in the worst cases. Should the strength be much reduced, every means must be taken to restore it by proper nourishment, a due regulation of the bowels, the mildest laxatives, and the administration of wine if necessary. During the attack, the necessity of rest in the horizontal posture should be strongly inculcated; and in the intervals, great attention must be paid that the exercise which the patient takes be duly regulated, so that it may be always short of producing fatigue. The shower bath, bathing the lower part of the body twice a-day in cold water, and even open sea-bathing, may be recommended, under the restrictions which have been so fully insisted upon in the former part of this chapter. Perhaps the acetate of lead may be found of as much service in diminishing this, as it has been in other discharges. Should there be any uterine pain or irritation, recourse must be had to opiates.

#### MENORRHAGIA.

I agree with Mr. Burns in the propriety of restricting this term to actual hæmorrhage from the uterine vessels. This discharge also occurs in every state of constitution, affecting full plethoric individuals, of active habits, equally with those of a weak, delicate, and relaxed frame. In the former, it may continue for a considerable period without making any inroad upon the general health; but in the latter, the system soon feels the drain; and in

either case, if the discharge continue long, the constitution becomes irreparably destroyed. Much depends upon the quantity of blood lost, and upon the length of interval between the attacks. Besides the weakness produced by the loss of blood, the debility is also increased by leucorrhœal discharge, which, in general, supervenes, together with disordered functions of the stomach and bowels: the appetite soon becomes impaired, and even destroyed, and the bowels irregular, with frequent attacks of diarrhœa, which depress the vital powers nearly as much as the original disease.

Menorrhagia is generally accompanied by pains in the back and loins, frequently by a shooting pain through the pelvis, and sometimes by fever. Anomalous hysterical symptoms frequently ensue, together with occasional distressing paroxysms of palpitation. It is worthy of remark, that, sooner or later, symptoms denoting a violent affection of the brain take place, so similar to those which are known to be produced by a determination of blood towards the head, and inflammatory action in the brain itself, that it is to be feared cases of this description have too often been treated by depletion. The symptoms are vertigo, and headache, both of which are increased by the patient raising her head, by noise, or by any one walking through the room. Every time the patient makes any attempt to raise the head, syncope is threatened; there is a constant singing in the ears; the pulse is generally weak and compressible, quick, and in many cases exceedingly irritable, so much so, as sometimes to appear pretty strong and wiry for a few minutes, which, I have no doubt, often imposes a belief that inflammatory action is going on, when really the brain is suffering from the want of a proper quantity of blood, as well as from deficiency of impulse.

*Causes of menorrhagia.*—This disease may depend upon general or local plethora; upon general debility; upon excessive leucorrhœal discharge and frequent abortion, which probably produce uterine debility; and upon inflammatory action, perhaps of a sub-acute nature, of the lining membrane of the uterus, together with that of its follicular structure, as well as ulceration at the os uteri. Menorrhagia has also been attributed to constipation, and excessive venereal indulgence; but these can only be regarded as occasional exciting causes in persons strongly predisposed to the disease. Prolapsus and polypus uteri, together with scirrhus and cancerous affections, and disease of the ovaries, also occasionally give rise to menorrhagia.

*Treatment of menorrhagia.*—From the facts above stated respecting the various causes of the disease, the necessity of an examination *per vaginam* will be evident, but in the case of an unmarried woman, it is only to be had recourse to when the disease resists the effects of ordinary treatment. The management of a patient during an attack of hæmorrhage is simple, and will in general be successful in restraining the discharge, if it does not depend upon extensive organic disease; but even then it will be often serviceable. In every case, the patient must be kept quiet in bed, without being overloaded with bedclothes; but at the same time a comfortable degree of heat is

to be preserved, otherwise bad consequences will be produced. The discharge has been rather increased, by the surface of the body being kept so cold as to occasion shivering.

In full plethoric constitutions, if there be no organic disease, and if the pulse be full and strong, venæsection will sometimes check the discharge instantly, and is employed upon the same principles as in epistaxis, hæmoptysis, &c.—viz. altering the determination of blood, and reducing the impetus of the circulation. The beneficial effects of leeching have surprised me much in several cases of menorrhagia, even when the discharge was complicated with extensive disorganization. I was first induced to apply leeches, in order to reduce uterine pain and irritation, which excite a determination of blood to the parts, and keep up the hæmorrhage, and have had recourse to this practice since, in cases where venæsection was altogether inadmissible. On several occasions, the hæmorrhage ceased almost instantaneously after the leeches had fastened, and before they could have abstracted a desert-spoonful of blood. In plethoric constitutions, the diet should be scanty, and not very nourishing, and the bowels should be kept open, by means of frequent doses of a weak solution of any of the neutral salts.

When menorrhagia occurs in weak, debilitated habits, or when the discharge is continued so long as to produce debility, the patient's strength must be supported by small quantities of nourishment given at short intervals, together with wine or brandy, notwithstanding the supervention of the giddiness, and other symptoms which generally indicate a severe cerebral disease. Rest in the horizontal posture with the head and shoulders low, and the most perfect state of quietness, are to be insisted on; and as the loss of every drop of blood is felt in this reduced state of the system, means are to be instantly taken to put a stop to further discharge. This is best affected by the exhibition of the acetate of lead in the form of pills, each containing two or three grains, combined with a third or fourth of a grain of opium, of which, one or two may be given every second, fourth, or sixth hour, as the urgency of the case may demand. As to its action I know nothing, and practical men of the present day care little about mere theories; but I have alluded to the subject, in order to speak of one theoretical objection that has been made to the practice. It is asked, if you were to cut your finger, would you think of trying to restrain the hæmorrhage, by taking acetate of lead or any other astringent? The answer is—certainly not, as there is a more easy and speedy method of doing so; but as we cannot apply a tight bandage round the uterus, or secure its vessels by ligature, we are obliged to have recourse to the other means which has been suggested by analogy, and the success of which has been proved in actual practice. I subjoin the following short history of a case of menorrhagia, the most threatening and the most hopeless that ever fell within my observation, which was successfully treated by the acetate of lead:—A lady, aged 47, the mother of a large family, of very delicate constitution, who had been always liable to profuse and frequent menstruation after fatigue, any



unusual bodily exertion, the application of cold, &c. was seized during the autumn of 1829 with profuse menorrhagia, which returned from time to time for six or seven months, each attack leaving her more and more debilitated and till, at length, the discharge never left her, and no remedy had any influence depressed, in controlling it. At last she was told, that no medicine taken internally could have any effect, and that her only chance depended upon keeping quiet, and throwing into the passages a solution of the sulphate of alumina, which was tried, but without effect; and, indeed, she felt that she could not bear the fatigue attending the operation. At this juncture, her relations sent for me, when she was in the following condition. The discharge still gushed from her, whenever she was moved for any necessary purpose; she was more ex-sanguined than any person I had ever before seen; the surface of her body was the exact color of death; and she had the hippocratic countenance. Her pulse was weak, small, and compressible, and beat about 100. She was perfectly sensible, but was affected with giddiness, headache, singing in the ears, a feeling of sinking, and she could scarcely speak without swooning. She had been for some time almost a stranger to sleep, and when she did slumber for a few minutes, she invariably awoke in terror and great agitation. A bowel complaint had lately supervened, which added to her distress, and increased her weakness, and for some days there were great irritability of stomach and vomiting, particularly when attacked with increased giddiness.

The treatment was immediately changed; warmth was applied, and other means were taken to restore and support the heat of the body; the bolster and pillows were withdrawn so as to lower the head, and 5 grains of the acetate of lead, with half a grain of opium, were ordered to be exhibited every third hour till she had taken the fourth dose. One person only was allowed to be in the room, and was desired to give her small quantities of brandy in some nourishing vehicle at short intervals if awake, but on no account was she to be disturbed, at least for several hours. My first visit was made in the evening, when the pills were ordered; and calling again at a late hour, found her quiet, composed, and full of hope, as there had been scarcely any discharge for two hours. She had just taken a second dose.

Next morning I found that my patient had enjoyed several hours of refreshing sleep,—that the restlessness had considerably subsided,—and that the discharge was quite suppressed. The other symptoms were much the same, and I was told that early in the morning, she had had a violent attack of vomiting with syncope, which threatened the extinction of life, but which went off after taking some additional nourishment, as soon as her stomach could be brought to bear it, and by the exhibition of powerful stimulants. She expressed herself in strong terms respecting the happy change effected in such a short space of time upon both body and mind, and her confidence of ultimate recovery. The effort to speak nearly produced syncope, and occasioned considerable irritation of stomach, and that condition which in Scot-



land is termed "dry bocking."\* The nourishment and stimulants were ordered to be continued at short intervals, and pills with 2 grains of the acetate of lead and one-third of a grain of opium were prescribed, with intervals of six hours instead of three.

At the evening visit, she was much in the same state, only that she laboured under a little agitation, in consequence of a return of the discharge on two occasions upon making some exertion; I found, however, that it was very small in quantity, and ordered the larger doses of the acetate of lead and opium to be given twice during the night, with an interval of four hours, and afterwards to recur to the use of the two-grain pills. She was persuaded to allow herself to be turned upon her right side, in which position she was supported and propped up by means of pillows, and a very small pillow was now placed under the head. From this change of posture she experienced great comfort, and on my visit next day I was told that she had slept soundly the whole night, waking only now and then, when she got nourishment,—that she had a return of syncope and vomiting early in the morning, but neither were so violent as formerly. She could now make use of slight exertion, and speak without the same bad consequences as those above described; the singing in her ears still existed, but was not so noisy and troublesome: still, however, she could not raise her head from the pillow without increasing it, producing giddiness and a tendency to faint. It was now time to obtain passage from her bowels, although there was some risk of producing a return of the flooding. A tea-spoonful of castor oil was exhibited, by which the bowels were moved, but, as was apprehended, there was some hæmorrhage at the time, though it did not alarm the patient much, as she was prepared to expect it.

In the evening she felt a little better, and had passed the day without any additional hæmorrhage, having taken only one of the smaller pills. She was now able to turn herself upon her side, and back again at pleasure, but still required the support of pillows. On taking my leave, I gave her one of the larger doses, and desired that she was to take nothing else during the night, except nourishment, with small quantities of brandy; this was found to agree with her better than wine, which became acid on her stomach.

On the following morning, I found that she had slept well during the night; she looked and felt better; her pulse, for the first time, felt stronger and slower; but she complained of pretty constant nausea, and oppression at the præcordia. This last I thought might be attributed to the action of the lead, and it was therefore discontinued in the larger quantities, indeed only two of the smaller pills were subsequently given. By perseverance of good nursing, and attention to the proper regulation of the diet and stimulants, this lady made a perfect recovery, notwithstanding one or two subsequent attacks of bowel complaint, which she experienced during her convalescence,

\* Which term means continued retching without discharging any thing from the stomach; the pain and sinking effect of which are known to every one who has suffered long from sea-sickness when the stomach was empty.

and which threw her back considerably. She has since menstruated regularly in proper quantity, and there has been no threatening of a return of the hæmorrhage.

Opium is to be used in doses of one, two, or three grains according to circumstances in cases of menorrhagia, where the discharge is kept up by general or local irritation. Its beneficial effects will be satisfactorily seen by the perusal of the following case. A lady about the period of the "change of life" was seized with menorrhagia. She had the best advice that could be obtained, and had taken every remedy which had ever been recommended for the suppression of uterine hæmorrhage, but without effect. The passages were stuffed with soft linen in vain, the discharge returned as soon as it was withdrawn; she became ex-sanguined, and seeing no hope of recovery, was in a state of great despondency. The sedative solution of opium was subsequently given. She required only two or three doses, when the discharge ceased, and she ultimately recovered.

Opium is almost indispensable when the system is very much reduced by hæmorrhage, from whatever part of the body the blood may have issued; it allays that peculiar irritability and restlessness,—prevents irregular determinations of blood, which are always most dangerous in this state of the system, and to which there is a strong tendency,—and lastly, produces quiet refreshing sleep. When the system is fairly brought under the influence of the drug, the strength is no longer exhausted by continual efforts to vomit, and by unceasing tossings of the body from side to side; it sends the whole system to sleep, if I may be allowed the liberty of using such an expression, and enables it to live on a smaller scale of vitality, which in the meantime is enlarged by the judicious and frequent introduction of small quantities of food into the stomach to recruit the strength. Taking this view of the action of opium in such cases, we are enabled to account for the loose expressions used in books respecting it. For instance, Mr. Burns says: "The strength must be supported by liberal doses of opium;" and it will be found that this gentleman and others also speak of a considerable dose of this drug as a stimulant.

Practitioners are sometimes not sent for till the symptoms of debility are extreme. Not a moment should be lost in these cases in plugging the passages, either with pieces of soft sponge, or a long stripe of old linen or cotton; but our dependence is not to be placed on this alone, it is only done to prevent further loss in the meantime.

Suppose the immediate danger over, and the discharge checked, the practitioner must consider what line of treatment ought to be pursued in the interval, because it may return again and again, if some effectual means be not taken. The treatment must depend on peculiarity of constitution; plethoric patients are to be treated very differently from those who are feeble and weakly. General blood-letting is only necessary in the former, when it is found desirable to restrain the impetuosity of the circulation instantly; if not, it is best to reduce plethora by a rigidly abstemious diet, and the daily exhibi-

tion of saline medicines, containing perhaps a minute proportion of tartrate of antimony, together with a due quantity of exercise in the open air, and avoiding heated rooms, the use of feather beds, and too many bed-clothes.

In debilitated habits, the diet should be nourishing, easy of digestion, and dry; all slops, whether in the shape of soup, jelly, or gruel, are to be abstained from; the extremes of heat and cold are to be avoided, and great attention must be paid to preserve the extremities in a proper degree of temperature. The employment of the shower-bath is very desirable in all cases, except those in which extreme debility has been induced; the water should be used at first tepid, and is afterwards to be gradually brought down to the temperature of the season. Stimulants are serviceable in many cases, and in some are indispensable; tonics may also be administered when necessary.

Astringent injections may be thrown into the passages, and are no doubt often serviceable; but in this country, there is a great reluctance on the part of women to use them, and when used, the operation is so often bungled, that I seldom speak of them to patients affected with menorrhagia, unless considerable relaxation of the parts exists, or the case be complicated with excessive leucorrhœal discharge. Their employment in extreme cases is inadmissible, from the fatigue occasioned by the operation.

#### CESSATION OF THE MENSES.

When women arrive at that period of life when the menses should cease, the discharge generally becomes irregular, sometimes obstructed for a time and returning again. Nausea and vomiting, particularly in the morning, swelling of the abdomen, and tenderness of the breasts, occasionally take place; which symptoms sometimes induce a belief that women are pregnant, when in fact their constitutions are undergoing a natural change. Occasionally there are considerable uterine pain, with dragging sensation in the back and groins, some fever, violent headache, with a full strong pulse, irregular state of bowels, loaded tongue, thirst, and other symptoms of deranged digestion and occasionally active hæmorrhage from the uterus. These circumstances, particularly that last mentioned, frequently induce a belief of cancer, when it does not exist. It is, however, an undoubted fact, that scirrhus both of the *mammæ* and uterus frequently occurs about the termination of the menstrual life; and, indeed, if the patient have any predisposition to organic disease it becomes lighted up, and the affection then generally runs a rapid course. The belief is so general as to the critical nature of the cessation, and the dangers which attend this important change in the female constitution, that women usually become apprehensive of themselves, and despond; and, whether they suffer or not, many have recourse to quack medicines, which are constantly advertised, and which they take, to endeavour either to prolong the discharge, or to ward off disease. It cannot be too generally made known, that many females suffer from this imprudent conduct, and create diseases, which in all probability never would have assailed them had they taken proper medical advice. Dr.

Denman, one of the wisest and most conscientious men that ever adorned the profession, states, that he "hardly recollects an instance in which such medicines did not do mischief."

It is proper to mention, that many women suffer no particular inconvenience at this period; some enjoy better health than formerly, and become *en bon point*, particularly those who have previously suffered from dysmenorrhœa.

*Treatment.*—When the symptoms are slight, the treatment is very simple; attention to the diet and bowels, warm clothing, together with proper exercise, being all that is necessary, and are in general sufficient to prevent any organic mischief. If any particular organ shows symptoms of suffering, appropriate remedies are to be had recourse to; but if there be general constitutional disturbance, or signs of uterine disease, particularly if the pulse be strong and firm, bleeding in moderate quantity will generally do good, and is to be repeated or not according to circumstances. The necessity for it is to be judged of, principally by the appearance of blood, the state of the pulse, and the constitution of the patient. In cases where general bleeding is either inadmissible, or its effects doubtful, we can have recourse to cupping the lower part of the back, or the application of leeches somewhere in the pelvic region. We must recollect, that when there is a tendency to local disease at the cessation of the menstrual discharge, it is in general of an inflammatory nature; therefore the diet and other treatment must be regulated accordingly. Although it is by no means necessary, and in many cases would be improper, to confine patients to the house, yet they must be careful not to expose themselves to cold and damp, and they must particularly guard against the possibility of cold feet.



## CHAP. XIV.

### DISEASES OF THE OVARIA.

---

THE Ovaria are subject to several diseases, as dropsy, scirrhus, vascular sarcoma, atrophy, and the formation of fat, hair, teeth, and bone. Of these dropsy is the most frequent, and this article shall be principally devoted to that disease; because it is difficult, if not impossible, to discover the existence of the other morbid alterations before death, and if discovered, no treatment has hitherto been devised which holds out any prospect of success.

Dropsical ovaria differ very much in external appearance, as well as in internal character; sometimes there is one large sac like a bladder, at other times the disease consists of many cysts varying in number and size, very often one within another, like nests of pill-boxes, from the smallness of a pea to such a great size as to contain two quarts of fluid, and even two or three gallons. The cysts are sometimes divided by fleshy or cartilaginous matter, or by indurated cellular substance; and if I know what scirrhus structure is, I have most undoubtedly seen it surrounding some of them. The thickness of the walls of these cysts is various; they are sometimes as thin as a hydatid, but more frequently like the urinary bladder; at other times they are an inch or two in thickness. The contained fluid is sometimes limpid and colourless, and without odour; at others it is viscid, ropy, and dark-coloured, and occasionally has a disagreeable smell. In one instance, it was the colour of port wine, flaky and fetid; in a number of cases which have fallen within my observation, some of the sacs contained a matter so like calf-foot jelly, that it was impossible from the appearance to say it was not that substance; while in others it was whitish, like honey after exposure to intense cold. Cases have been described, particularly in the *Philosophical Transactions*, of ovaria filled with hydatids, but I believe the bodies so called have generally no pretensions to the name; no one, as far as I am aware, has ever been able to trace a single vessel on the true hydatid, whereas in the diseased ovaria, the sacs are so very vascular, that without being injected, vessels containing blood may be traced beautifully aborescing over them. Some cases are related in the *Philosophical Transactions*, and there is one in Haller's works, in which the ovary and its contents

weighed above one hundred pounds,—the largest I have ever seen removed from the body after death, weighed twenty-five pounds, but they are rarely above twelve or thirteen.

These diseases of the ovaria are sometimes slow, at other times quick in their progress; or they may be slow for a number of years, and then, from some slight cause, and often even without any apparent reason, become more active, and destroy the patient's life in a few months, and sometimes even in a few days.

This class of diseases is often complicated with affections of the uterus, such as tubercles, or even scirrhus and cancer: and in one patient whose body I opened, both ovaries were diseased; the one contained fatty matter and hair, the other was in a state of vascular sarcoma, and considerably enlarged; the uterus, more than double its natural size, was also in the state of vascular sarcoma, and there were likewise ulcerations on the lips of the os uteri, as well as within the cervix, but they were not of a carcinomatous character. These ovarian tumours are always covered with the peritoneum, and are often found adhering extensively to the surrounding parts, in consequence of the supervention of inflammation, and I have sometimes seen them adhering at almost every point.

On opening the bodies of individuals, several of them of children, to ascertain the cause of death, some of whom had died of pneumonia, others of hydrocephalus, and many of bowel complaints, I have occasionally observed vesicles, some the size and shape of small grapes, others like large currants, and attached by a long pedicle to the broad ligament in the neighborhood of the ovarium. They sometimes existed solitary; at other times two or three might be seen suspended from one broad ligament, of which there are several specimens in my museum. I recollect having seen several vesicles attached by long and narrow pedicles to the peritoneal coat of the left ovarium in a child between two and three months old, who died from having been accidentally overlaid by its nurse. These vesicles are sometimes very vascular, and when enlarged, I have reason to believe, have been often mistaken for ovarian diseases.

It is impossible to determine the exact time of life at which diseases of the ovaria may commence; but the fact is well ascertained, that they never have been known to create local or constitutional disturbance, or to obtain any great size, till after the twentieth or twenty-first year.

*Symptoms of diseases of the ovaria.*—These diseases are seldom detected, till from their increasing size they press on surrounding parts, or produce peritoneal inflammation, and thus create constitutional symptoms. In some cases, although the enlargement is considerable, the patient may not complain of pain; and, but for the weight of the tumour, and the mechanical pressure upon the bladder and rectum occasionally producing stranguary and piles, some women with ovarian disease would suffer very little uneasiness. In other instances, acute pain attends the disease from a very early period, and

it is the first circumstance which occasions a suspicion of disease. The pain comes and goes, and affects not only the lower part of the belly, but shoots into the groins, and down the thighs. Frequently it is found, by comparing the appearances discovered on dissection with the history of the case, that the attacks of pain have been owing to peritoneal inflammation, as proved by the existence of the adhesions, some of old-standing, others bearing the marks of recent date. The menstrual discharge is rarely suppressed, or otherwise affected than having been sometimes observed to be more profuse than natural, and to take place at shorter intervals. The functions of the stomach are frequently involved, sometimes giving rise to ordinary dyspeptic symptoms, particularly nausea and vomiting, as in the early months of pregnancy. I have seen the mammæ become enlarged and tender, in proportion as the tumefaction of the abdomen increased; the nipple at the same time having the dark areola round it, which is considered so characteristic of pregnancy. Patients occasionally suffer very much from severe headaches, and violent hysterical symptoms.

If we examine *per vaginam*, the tumour may sometimes be felt between the vagina and rectum, particularly before it becomes very much enlarged; and also when it happens to be lodged in that *cul-de-sac* formed by the peritoneum, as it is reflected from the rectum over the posterior surface of the uterus. In such a case, the *os uteri* will be found tilted forwards close to the symphysis of the pubis, and we shall be liable to mistake the disease for retroversio uteri; but, in general, an examination by the rectum will undeceive us. As the tumour enlarges it will ascend out of the pelvis, perhaps high up into the cavity of the abdomen occupying its centre, and having a very close resemblance to the gravid uterus; at first, however, it will be felt in one of the iliac regions, about the size of an orange, but if the patient be fat, it may be impossible to discover it even when much larger. I have seen several cases where the tumour nearly filled the cavity of the abdomen, thereby simulating ascites, with which indeed it is sometimes combined, as in a case recorded in the 8th vol. of the Medical and Physical Journal, in which there was about a gallon and a half of fluid found in the abdomen, and both ovaria were enlarged so as to weigh together one hundred and two pounds. With respect to the feeling of fluctuation in these cases, I know nothing in the practice of the profession so difficult to determine. I have seen a solid tumour of the uterus which weighed above fifty pounds, the whole anterior surface of which was attached to the parietes of the abdomen, and notwithstanding which circumstances, the feeling of fluctuation during life was thought to be so distinct, that the woman was tapped three times, once by Dr. Scott in the presence of Mr. Marshall and myself, a second time by Dr. Duffin, at the suggestion and in the presence of Mr. Wishart; and the third and last time the operation was performed, I have the mortification to say, with my own hands in the presence of Dr. Christison, and upon the assurance of the most eminent men in Edinburgh that there must be a fluid somewhere. I remem-

ber well borrowing the longest trocar that could be obtained for the purpose, but the operation proved to be as dry a tapping as the others. Some little time after that occurrence, I was asked to see a woman with a large abdomen, who had been previously tapped under the notion that she was affected with ascites; no fluid followed the puncture; some hours afterwards peritoneal inflammation took place, of which she died in a few days. When the pain first came on in the belly, the patient was examining the wound made by the trocar, when she accidentally coughed, and a small quantity of matter like jelly was discharged; she then made additional attempts by pressing and coughing to get rid of more, and a considerable quantity was thus evacuated, but without relief. When I saw her she was moribund; and on dissection an ovarian disease with sacs containing a gelatinous matter was found, filling a great part of the abdomen, and extending a little above the umbilicus; the mark of the trocar was observed in the superior part of the tumour, the anterior surface of which was free, but so extensive were the adhesions behind, that it occupied me fully half an hour in dissecting the morbid parts carefully out, during which many large blood-vessels were divided.

*Treatment of ovarian disease.*—In the exercise of our profession, nothing is more disagreeable, and even humiliating, than to be obliged to witness from day to day, for a period of months or years, the sufferings of patients under a disease like this, without being able to do more than to palliate symptoms by means of narcotics. Sometimes we have the additional mortification to find that temporary tranquillity is produced at the expense of increased after-suffering; so that there really is something to tempt an individual, with an enterprising spirit, to the performance even of the horrible operation of opening the abdomen from the ensiform cartilage to the pubis, in the hope of being able to effect a radical cure. This operation has now been performed several times by Mr. Lizars of Edinburgh; and I have no doubt, from his anatomical knowledge and experience in operating, it was done in all the cases with the greatest dexterity, and that no means were neglected which could ensure success. But mark the results.

In one operation nothing was discovered but flatus in the intestines; and the woman died in forty-eight hours.

In another who was affected with curvature of the spine and lumbar abscess. after the abdomen was laid open, "the uterus and ovaria were found sound and healthy," but it was discovered that the woman was very fat. This woman escaped with her life at the time, although stated to be "often severely tortured with pain," but is still alive.

In a third operation, the subject of which also laboured under ascites, Mr. Lizars took away a considerable-sized tumour on the left side, but was forced to leave one on the opposite side untouched from the extent of its adhesions to surrounding parts, the uterus being also a little enlarged. This woman survived the operation, but died three years afterwards.



In a fourth case, Mr. Lizars took away a tumour by separating adhesions between it and the viscera; and the woman died from mortification.

In a fifth case, Mr. Lizars cut open the abdomen and found a very large tumour, so completely attached to surrounding viscera, with so many large blood-vessels in the way of completing the operation, that he was forced to abandon it, and to stitch up the abdomen. But in justice to Mr. Lizars, I may mention that he maintained his coolness and self-possession, under circumstances which made the undaunted heart of the late Dr. Dease shrink within him; and it may be mentioned, he was one of the best and most successful operators that the British army ever had to boast of. This woman survived the operation, and is still living.

In a sixth case, upon which Mr. Lizars operated at Dumfries, he cut away a tumour projecting from the fundus of the uterus, which was thought to be an ovarium, but the woman died in a few days from inflammation, and the ovaria were found quite snug and sound in their proper situation.

After giving this simple statement, I shall content myself with laying before young practitioners the reasons why I consider this operation unadvisable.

1. It is difficult to tell whether there be a tumour or not in the abdomen: and it will be remarked, that, in two out of six of Mr. Lizars' cases, no disease was found to account for the tumefaction of the abdomen.

2. If there be a tumour, it is impossible to determine whether it is of the uterus, ovaria, or some other part. Not long ago, Dr. Briggs, now a graduate of Cambridge, when my pupil, attended a woman most assiduously during a whole winter, who had an enlarged abdomen, and I had no doubt, after making an examination *per vaginam*, that the great enlargement was produced by ovarian disease. Externally, there was felt a large, hard tumour on the right side of the abdomen, as if it had risen out of the pelvis, and from feeling the os uteri tilted up towards the right side of the pelvis, it appeared still more certain that the disease was ovarian. It was understood that many other medical men had pronounced a similar opinion, and an operation was proposed to her, which she was averse to, but resolved to abide by my opinion, which was, that she ought not to submit to it. Besides the uncertainty of the operation itself, and the dangers which necessarily accompanied and followed it she was effected with one of the worst forms of epilepsy that had ever come under my observation. The woman followed my advice, but in the course of six months expired during an epileptic fit. On dissection the uterus and ovaries were found quite healthy, but the liver was enormously enlarged, and it was this organ which had occasioned the tumefaction of the abdomen.

Some years ago I attended a very amiable and interesting young lady along with Dr. John Gairdner of this city, who laboured under a very complicated set of disorders, which baffled our skill to cure, and we advised her to go to London, where she had a brother a medical man. One celebrated individual, who has figured in ovarian operations, most unhesitatingly pronounced her

complaints to arise from disease of the ovarium, which Dr. Gairdner and I were persuaded did not exist. Sometime afterwards she died at Newcastle, and on opening the body, the uterus and ovaries were found perfectly sound, but extensive disease was discovered in the stomach, colon, liver and kidneys.

3. It is impossible to tell whether a diseased ovarium is attached to surrounding parts, which must always be an insurmountable objection to an operation; for should there be extensive adhesions which require to be separated during the operation, such a separation, whether affected by the knife or by the fingers, must seal the fate of ninety-nine women out of the hundred. Even in the dead body, I have been occupied more than half an hour in separating an ovarian tumour from its adhesions, and removing it from the body, which was not effected without wounding many large blood vessels; and the following description is given by Mr. Lizars of one of his own operations:—After opening the abdomen from the sternum to the pubis, “a multiplicity of convoluted vessels presented themselves, of various magnitude, from the thickness of a finger to that of a crow’s quill. At first I thought them the intestines, for they appeared extremely fleshy; then I imagined them the blood-vessels of a placenta, which they still more resembled; indeed, such was their resemblance to the vessels of that organ, that the same idea struck one and all of the gentlemen present. On minute examination, however, they were found to be the blood-vessels of the omentum majus, enormously enlarged, running on the surface and into the substance of the tumour, which appeared an enlarged ovarium. Finding that it was impracticable either to dissect these vessels from the surface of the tumour, or to secure them, in consequence of their great number, I abandoned the idea of extirpating the mass, in which decision I was supported by the gentlemen present; I therefore punctured with a large trocar and canular the centre of the tumour, but nothing flowed; I next made a small but deep incision with a scalpel, when the tumour appeared solid and cartilaginous, and a vessel bled a little: I lastly punctured the lower part of the tumour, being anxious to reduce its bulk, but only pure blood flowed. The lips of the wound were now approximated and stitched; adhesive straps were applied, compresses of lint and linen, with a shawl as a binder, and the patient was carried to bed. This operation was performed in the presence of James Dease, Esq. surgeon to the forces; Drs. Poole, ———, and Millar; Messrs. James Scott, George White, and many other surgeons and students.”

In Mr. Lizars’ case of Isabella C——, he succeeded in insulating a large mass weighing upwards of seven pounds, which he “found adhering so strongly to the parietes of the abdomen, to the colon, and to the brim of the pelvis, that I despaired (says he,) of being able to detach it; however, by dissecting at one time, and tearing cautiously with the fingers at another, I succeeded;” &c. She died at 7 o’clock in the evening of the second day.

4. It ought to be considered, whether the dangers arising from the operation, are not greater than from allowing the disease to remain undisturbed.

In the first place, we have to consider the chance of the patient dying immediately from the shock, or from hæmorrhage, or subsequently from inflammation, after she has undergone the horrid torture occasioned by an incision from the sternum to the pubis, independently of that produced by exposing and handling the viscera, and cutting away the tumour, not to speak of the difficulty of restraining the protrusion of the intestines, both during the performance of, and subsequent to the operation. "I shall never forget (says Mr. Lizars,) the countenance of my pupils, and the *younger* members of the profession, when the intestines protruded and baffled all the efforts of Dr. — and other gentlemen to confine them. The diaphragm acted with great vigour, and with powerful impetuosity."

To give my opinion in the shortest possible manner, I shall simply state, that I regard a recovery after such an operation as almost miraculous, and to be considered more in the light of an escape than a recovery to be expected, particularly if performed with an external incision through the parietes of the abdomen and peritoncum from the ensiform cartilage down to the pubis.

There is only one case, in which an operation should be attempted,—when we are consulted early, and find a tumour just above the brim of the pelvis, which is moveable, and falls from side to side, when the patient changes her posture,—when it is ascertained after careful examination, both by the vagina and the rectum, that the uterus is in all probability sound,—when the patient has as yet had no pain or constitutional symptoms, indicating the existence of peritoneal inflammation, which may lead us to believe there are no adhesions between the tumour and surrounding parts,—and when the patient appears to have great courage and stamina, and as many lives as cats are figuratively represented to possess. In such a case I would recommend an operation, with an external incision barely large enough to admit the passage of a small hand to examine the disease, and bring the surface of the tumour to the opening, that its size may be diminished by tapping if necessary, when the sac can be drawn out by degrees, very much in the manner represented to have been pursued by Dr. Macdowal of Kentucky.

It is difficult to say what line of treatment ought to be adopted in diseases of the ovaria; but I shall state that which I have found to be most beneficial in these unfortunate cases. It is indispensably necessary to attend to the state of the bladder, by taking care that it be not over-distended, and that any irritation which may occasionally arise in this organ be mitigated by camphor and hyosciamus, together with fomentations applied to the lower part of the abdomen; and the bowels are to be daily evacuated if necessary by mild laxatives, assisted by tepid water injections. Considerable relief is often experienced from the repeated application of leeches, and counter-irritants, which operate not only by mitigating pain, but by stopping the advancement of peritoneal inflammation, which is so apt to occur, and also by arresting the progress of the diseased growth. Occasional opiates will be also serviceable. The use of diuretics cannot, I think, be upheld in the true ovarian disease,



as they can have no effect either in promoting absorption, or preventing a further collection of fluid in the sacs; neither can I fancy that iodine in any of its forms can have the effect of causing an absorption of such diseased masses as I have seen the ovaria to consist of.

The next important question comes to be,—Is the operation of tapping these tumours likely to prolong life? Experience obliges me to say, that in general it is not, although there may be exceptions to this. Tapping in such cases is an uncertain operation, from the obscurity which generally hangs over them; and it may prove the first exciting cause of peritoneal inflammation, which may quickly produce death, or leave extensive adhesions between the tumour and surrounding parts. I have already shown, by the description of two cases in which tapping was performed, how uncertain are the indications for the operation; and I know of one case, where the operation of *paracentesis abdominis* was performed, under the idea of the existence of ascites, when there was actually no fluid. Feculent matter came through the canula, instead of the watery effusion; the woman soon expired, and dissection showed that the trocar had penetrated the colon. But independent of these objections, which show at least that this operation, simple and slight as it appears to be, should not be recklessly performed, diseased ovaria are generally composed of such a number of cysts, that when a puncture is made, either no fluid at all, or only a small quantity, may be discharged, being the contents of one inconsiderable-sized cyst; besides, I have found that the fluid is quickly secreted, and that the more frequently the operation is performed, the more frequently does it require to be repeated. Thus it will be seen in a case recorded at page 123 of the Medical Communications, 2d vol. that a patient was tapped forty-nine times from first to last, and two thousand seven hundred and eighty-six pints of fluid were drawn off; and it is stated, that the secretion went on so rapidly at last, that by calculation, three pints and three ounces were secreted every twenty-four hours. Another case is recorded in the 74th vol. of the Philosophical Transactions, in which the patient was tapped eighty times, and the immense quantity of thirteen hogsheads of fluid were evacuated. Many other cases proving the same facts are to be found both in the English and Foreign Transactions, which incline me to agree with the opinion of the late Dr. Denman,—that the operation of tapping should at least be delayed as long as possible, partly from its being an uncertain operation, but principally because it is quickly followed by another accumulation, so that in the course of a few days the patient is in as bad a state as ever.

I had nearly neglected to mention another proposal which was formerly made and carried into execution, with the view of effecting a radical cure; it consisted in laying open the abdomen, and making an incision into the tumour, to evacuate the matter, and afterwards throwing in a stimulating injection, to excite inflammation in the sides of the sac, in order to produce permanent adhesion, or introducing a tent to keep the wound open until the



fluid ceased to be discharged. A case is related by Dr. Houston, in the *Philosophical Transactions*, in which he made an incision two inches in length into the ovarium, and evacuated a great quantity of jelly-like matter and hydatids; the wound was afterwards kept open, and the patient is represented to have been cured, although the disease had existed for thirteen years, and occasioned violent pains. In the *Memoirs of the Academy of Surgery*, a case is to be found of a woman who was tapped for a large tumour in the belly, but nothing came away; an incision was then made into the tumour through the parietes of the abdomen, and thirty-five pounds of gelatinous matter were extracted,—next day fifteen pounds more were discharged, but vomiting and fever took place, and she died on the thirteenth day. I may add, that Dr. Denman notices the case of a patient who died on the sixth day after the sac was injected.

## PART XI.

---

GOUT.—RHEUMATISM.—SCROFULA.—DROPSIES.



## CHAP. I.

### GOUT.

---

THIS disease is sometimes known by the terms *Podagra* and *Arthritis*. Dr. Cullen has divided it into four varieties:—

“1st, *Podagra regularis*, with decided inflammation of the joints continuing for several days, and receding gradually, with swelling, itching, and desquamation of the part.”

“2d, *Podagra atonica*, with debility of the stomach, or some other internal part, and either without the expected or usual inflammation of the joints, or with slight and flying pains in them; with dyspepsia or other symptoms of debility often quickly alternating.”

“3d, *Podagra retrograda*, with inflammation of the joints, receding suddenly, and followed immediately by debility of the stomach, or of some other internal part.”

“4th, *Podagra aberrans*, with inflammation of some internal part, preceded or not by inflammation of the joints; if so preceded, the external inflammation quickly disappears.”

Dr. Mason Good has enumerated three varieties of gout:—

“1st, Regular fit of gout,” which differs in nothing from Cullen’s first variety.

“2d, Disguised, lurking, atonic gout,” which is nothing more than Cullen’s second variety.

“3d, Complicated gout,” in which he includes Cullen’s third and fourth varieties, under the terms “retrograde, recedent, misplaced gout.”

Dr. Scudamore, who has written a large volume on gout, urges most potent objections, both nosological and practical, to these divisions and the definitions attached to them. He divides gout into three varieties, viz. acute, chronic, and retrocedent; and the following are his definitions:

“Acute gout.—Inflammation and pain of the articular, tendinous, or bursal structure, usually attacking one part only at the same time; but in succession of attack, affecting different parts together; with preternatural fulness of the adjacent veins, and in certain situations, with œdematous swelling of the integuments, occurring in twenty-four or forty-eight hours from the invasion of the fit; vivid redness of surface, which is sometimes shining; entire disability of the affected part, with peculiar sensations of burning, throbbing,



cutting and pricking, and weight; the action sometimes readily changing situations spontaneously or from slight causes; terminating almost invariably without suppuration, and usually with some critical indications of the event."

"Chronic gout.—Inflammation and pain more slight, irregular, and wandering, than in the acute; faint redness of surface; much permanent distension of parts, or continued œdema, and impaired moving power; without critical indications of its terminating; commonly associated with a morbid state of the digestive organs, a languid or oppressed circulation, and much nervous irritation in the system."

"Retrocedent gout.—Metastasis, or transference of the gouty action in the paroxysm, from the external part of some internal organ."

It may appear a strange confession to come from me as a Lecturer on the Practice of Physic, that I never read Dr. Scudamore's Treatise on Gout, till actually engaged in writing this article, although I have long known that such a work existed, and that its author had attained a high degree of eminence in practice; but I have several reasons in excuse to plead.

It is impossible for a person engaged in practice, and at the same time most anxiously employed in investigating the nature and seats of disease, to peruse every medical work which now-a-days comes from the press. With respect to what had been previously written on gout, I had derived nothing but vexation and disappointment from the perusal. Very early in life, I had frequent opportunities of witnessing the phenomena, progress, and termination of gout; and during an attendance on a near and dear relative in the course of long paroxysms of this disease, I was compelled to read aloud, for his satisfaction and my own improvement, all the published works of the day. At last, when it was pronounced by a celebrated writer, that after all, the only thing to be done for gout, was "*patience and flannel*," my patient became almost frantic with rage, and declared, that although he was not a physician, he could write more sensibly upon the subject himself, and concluded by desiring me to study nature, and not books, if I wished to obtain a knowledge of the disease. I never forgot the advice, and from that moment I began to make a book by storing facts in my own mind.

When lecturing on gout, I have contented myself by giving a simple statement of all the pathological facts which I had observed, and by commenting on the statements made by Dr. Mason Good in his chapter on this subject; but after seeing Dr. Scudamore's treatise, it behoves me to state, that I have never been more gratified and instructed from the perusal of any medical work; and as the opinions which I entertain are similar in many respects to those of Dr. Scudamore, I shall avail myself of many of his facts and observations, because they are drawn from a more enlarged experience.

#### PHENOMENA OF A PAROXYSM OF REGULAR GOUT.

"The gout, (says Cullen, Par. 492,) not only as it occurs in different persons, but even as it occurs in the same person at different times, is a disease

of such various appearance, that it is difficult to render the history of it complete and exact, or to give a character of it that will universally apply."

The first attack usually occurs in one of the feet, generally in the ball of the great toe, which has more or less of the appearance described by Dr. Scudamore in his definition of acute gout, and which there is no necessity for repeating in this place. The patient often attributes the sensations he experiences to a twist he thinks he has given his foot, or to the effects of a tight boot or shoe. Dr. Scudamore says, at page 17: "On some occasions, and especially in the first fit, the immediate invasion of the disease is not preceded by any warning." The reason of this I believe is, that the warning has not been taken, as I have never yet seen a case which was not preceded by a distinct announcement of gastro-intestinal irritation. The tongue has always a morbid appearance, being loaded, or having a fiery red colour, or being shrunk and blanched; the bowels are irregular; the patient feels loaded and oppressed after eating; there is acidity of stomach and heartburn, which is sometimes excruciating, accompanied by occasional vomiting of a very acid matter. The epigastric region cannot bear pressure; the urine is scanty, high-coloured, and becomes thick and muddy after standing. The patient is often observed to be depressed in spirits and drowsy, although he cannot sleep, and the nights are passed with great restlessness. The limbs are affected with numbness, weakness, and a pricking tingling sensation, with cramps and darting pains along the course of the nerves, more particularly in the extremity in which the disease is afterwards to be fixed. The extremities at times can scarcely be preserved in the natural degree of heat; at others, they become burning hot, particularly the soles of the feet, and the balls of the great toes, and these states alternate. There are sometimes general rigors, or rather fits of chillness, followed by feverishness, during which the face becomes flushed, and there is sometimes headache.

These precursory symptoms, and others which might be mentioned, vary much in different individuals, depending upon idiosyncrasy. I have never known a person subject to gout, who was not warned of an approaching paroxysm, by some sensation or symptom which might be said to be almost peculiar to himself. Thus, one will have violent fits of sneezing;—a second, a feeling of heat and pain in his eyes, with a diminution of the lacrymal secretion;—a third will perceive heat, redness, and swelling at the point of the nose;—a fourth will have a bronchial affection, with cough, and slight expectoration;—a fifth will be aware of the approaching attack, by a peculiar appearance of the tongue, a feeling of coldness, heat, or acidity in the stomach, perhaps an unusual craving for some particular kind of food,—a sixth is made apprehensive by the occurrence of diarrhœa, by unusual sluggishness of the bowels, or flatulent distension of the abdomen;—a seventh will have great irritation about the neck of the bladder, scalding in the urethra, and perhaps discharge of matter, sometimes passing a little blood, and having slight difficulty in making water;—an eighth will experience an unusual lassi-

tude, inability to apply his mind to any subject, and irritability of temper, at times giving way to sudden bursts of passion, or merely to a feeling of peevishness;—and a ninth will suffer from palpitation, or some other symptoms sufficiently striking to arrest his attention. Those who have experienced a few attacks of gout, are hence able to take steps which will sometimes either postpone the paroxysm, or mitigate its violence when it does come on.

At length the paroxysm fairly sets in with the following local symptoms; pain, which soon becomes burning and throbbing, with occasional stounds from the affected part up the limb, the return of which the patient constantly dreads; some degree of swelling, which, as well as the pain, increases rapidly; so that, in a few hours, the parts are much swollen, red, with considerable distension of the neighbouring superficial veins. Even from the first, a great part of the swelling is owing to œdema, for the parts will be found early in the disease to pit slightly on pressure. The redness soon becomes of a bright scarlet hue, and the throbbing, shooting pains, heat, and inability to move the limb, rapidly increase, so as to be at their acme in a first fit, perhaps in the course of twenty-four hours.

First attacks are in general, although not always, slight, the patient being able through the day to bear his sufferings at least with composure. At night the pain and general fever increase, but decline again towards morning, with a slight relieving perspiration, at which time perhaps the patient enjoys a little slumber.

The constitutional symptoms which occur during the paroxysm, vary not only according to the severity of the local inflammation and pain, but also to the state of health in which the patient may happen to be at the time. If there be any organic affection, of course the symptoms will suffer modification, which, however, falls to be considered under the head of retrocedent gout. The first constitutional symptom which naturally attracts attention is fever, and in all old standing cases of gout, the disease makes its approach with chilliness, and cold extremities, succeeded by some degree of fever, and its usual attendants,—restlessness, thirst, want of appetite, and præcordial oppression. The pulse varies; it is generally full and hard, and indicates an inflammatory and plethoric state of the system, unless the patient be reduced in health and strength by the long continuance of previous organic disease or intemperate habits. Even in slight cases the digestive organs show much functional suffering; besides want of appetite and thirst, the patient experiences abdominal pains, which are owing, perhaps, in nine cases out of ten, either to some indigestible matter lodged in the stomach and bowels, or to their flatulent distension, but which are too often attributed to cramp and spasm, and which leads to the exhibition of opiates, and particularly stimulants. In many cases burning pain, or merely a sensation of heat, is experienced in the epigastric region, where pressure cannot be well borne accompanied by sour eructations, or vomiting of a very acid and acrid matter, which produces a sense of heat and rawness in the esophagus. This matter



sometimes looks as if mixed with bile, of a green colour; at others, it is limpid and colourless. The tongue is furred, red round the edges, or it is clean, but of a fiery red colour, with the papillæ much raised; but a furred tongue is the most common appearance, being either white, or having a yellowish tinge. The bowels are sometimes affected with looseness, but far more frequently they are torpid, and the evacuations are fetid, and look very vitiated and unnatural, being frequently mixed with mucus, which sometimes appears in shreds. The urine is scanty, high-coloured, producing irritation in the bladder and heat in the urethra, with their attendants, frequent desire to make water, and some degree of difficulty in doing so. On standing, a pink or brick-dust sediment takes place in every case during the inflammatory stage. The urine is often mixed with mucus, and is represented to be of greater specific gravity than when in a healthy condition. As the inflammatory symptoms subside, the urine loses its high colour, and by degrees ceases to deposite a lateritious sediment; but in its place there is a whitish deposit, as if it were mixed with a small quantity of chalk or magnesia. Dr. Scudamore thinks that the brick-dust sediment depends on the functions of the liver; and there can be no doubt that it has a share in the cause, but it is quite as likely to depend upon functional derangement of other organs, particularly of the stomach.

The nervous system shows marked evidence of derangement, as is evinced by irritability of temper, general sensibility and restlessness, the intensity of the pain, the darting cramps extending along the course of the nerves, even throwing the muscles occasionally into violent spasmodic contractions, as well as by the sudden and instantaneous translation of the inflammation from one limb to another.

In the course of two or three days, the symptoms are found to have under gone considerable mitigation. The patient then complains of weakness in the limb, with perhaps slight tenderness of the part. It rarely happens, when gout may be said to be in its infancy, that the inflammation, as it declines in one foot, appears in the other, or in any other joint, which circumstance is so frequently observed to take place in the old standing cases.

The œdematous state of the part continues for some days after the subsidence of the inflammation; and occasionally desquamation of the cuticle takes place, with much temporary itching.

In one hundred and seven cases of the first attack of gout, Dr. Scudamore has given the following comparative statement, showing the parts most liable to be affected:

In 70 cases the inflammation was in one foot only.

In 8, the great toe of each foot.

In 2, the toe and instep.

In 2, the outer side of one foot.

In 1, the heel of each foot, the hand, and elbow.

In 3, one ancle.



In 1, each ancle.

In 1, the ancle of one foot, and toe of the other.

In 3, the ancle and instep of one foot.

In 1, the toe, instep, and ancle of one foot.

In 2, instep of one foot.

In 1, instep of each foot.

In 1, one instep first, afterwards each knee, wrist, elbow, and shoulder.

In 1, heel of one foot.

In 1, heel of each foot.

In 1, each foot and hand.

In 1, right thumb, and afterwards in the toe.

In 1, right knee.

In 2, left knee.

In 1, hand and wrist.

In 1, back of one hand.

In 1, back of each hand.

In 2, one wrist.

In the early fits of gout, the health improves soon after the local symptoms decline, and I have heard many people declare they felt themselves better and more vigorous than they had done for weeks and even months before.

The gout may return annually, perhaps at shorter intervals; on many occasions, however, there is no threatening of a paroxysm for several years; but as the disease goes on, the attacks are generally more severe, the fits longer and the intervals shorter, the parts affected more numerous, till at last the constitution becomes broken down. Dr. Scudamore has justly observed, that the frequency of a return of gout is in proportion to the constitutional tendency, and to the unfavourable mode of life of the individual.

In subsequent attacks, the constitutional and local symptoms are similar in character to those already described, but are more marked in point of severity, of longer duration, and the constitutional nature of the disease becomes more and more manifest. The precursory symptoms are also rendered more apparent by becoming more severe with each returning fit. But we are assured by Dr. Scudamore, that even confirmed gouty subjects are sometimes attacked at the very moment when they most congratulate themselves on the possession of health and strength; and he has seen some fits thus sudden and unexpected, in the sequel very tedious and severe.

There is no disease, except perhaps rheumatism, in which such complete metastases, or translations of the inflammation, take place as in gout, the disease having been frequently observed to originate in the toe of one foot, at the very time it disappeared in the other. There can be no doubt of the fact, although in many cases I have been able to satisfy myself that the inflammation in both feet had previously co-existed; but when it became more painful, and a greater annoyance in one foot, the attention was attracted from the other. In the same manner, a complete metastasis sometimes takes

place from the great toe, or from any other joint, to an internal organ; but this, I am also persuaded, is often a deception, and can be explained in a similar manner.

#### PHENOMENA OF CHRONIC GOUT.

When the constitution is considerably injured by long-continued indulgence in luxury and bodily inactivity, or is worn down by repeated attacks of acute gout, the disease assumes a less violent, but still more dangerous form, which Dr. Scudamore has called "chronic,"—Dr. Cullen, "atonic,"—and Dr. Mason Good, "disguised, lurking, atonic gout."

This form of the disease is generally a consequence of previous acute attacks. The local inflammation, pain, and redness, are comparatively slight; there is more permanent distension, œdema, and helplessness of the affected limb, than in the acute form; but the conditions of the digestive organs, of the circulating and nervous systems, are more embarrassed and oppressed. The disease is more bearable in this than in the acute form, because the patient does not suffer that extreme agony occasioned by intense local inflammation; but there is nevertheless more danger from the importance of the parts whose functions are very seriously impeded, which sooner or later terminates in structural lesion, and it is invariably observed that the paroxysms are more frequent and irregular.

According to Dr. Scudamore—"The state of the constitution in chronic gout embraces a great variety of symptoms, which are modified by the temperament and habits of the patient; by the situation and degree of local disease; and also by the seat and nature of the internal visceral derangement. Indeed so many anomalies so often arise in this impaired state of the health, partly depending on internal causes, and partly on the painful or uneasy state of the affected textures, that probably no description would be adequate to include all these shades of sympathy; and it may be sufficient to delineate a general outline." (P. 327.)

Some patients are severely distressed with dyspeptic symptoms, such as uneasy sensations in the stomach and bowels, nausea, a craving desire for food, oppression, and flatulent distension after every ordinary meal, which are much increased if the stomach be incautiously loaded. Some experience cramps, others heart-burn, and some a peculiar coldness in the stomach, which they compare to that which would be produced if it were filled with ice. The cramps are owing, I am persuaded, in a great majority of cases, to efforts made by the stomach and bowels to expel crude and indigestible matters, as well as to distension from flatus, and are not commonly, at least, of that mysterious nervous character which is generally imagined. Although the patient's appetite seems natural, yet he is not nourished by his diet, he neither experiences increased strength nor vigour, but, on the contrary, suffers additional constitutional and local irritation, and even feverish action. His mind becomes more weak and irritable, often hypochondriacal; he is haunted by imaginary evils during the day, and by disturbed, or even frightful dreams

at night; and the sleep is, in general, broken and unrefreshing. Palpitations are common, not only in the region of the heart, but in the course of the abdominal aorta, even when the heart's action is quite tranquil and natural. The body becomes more susceptible to the impressions of atmospherical vicissitudes; the limbs become emaciated and weak, when the abdomen is perhaps growing larger; the bowels are sometimes costive, sometimes loose; the stools always possess an unnatural fetor, sometimes having a white appearance, showing a diminution of biliary secretion; at other times they are dark-coloured, and very frequently mixed with mucus. I have even seen the mucus tinged with blood, and attended by all the usual symptoms of dysentery. There is considerable irritation about the rectum, no doubt often produced by the enlarged and painful condition of the hæmorrhoidal veins, which occasionally discharge blood, sometimes in considerable quantity; and many gouty people are so much relieved by periodical hæmorrhage, not only from the anus, but from the nose, that they consider it necessary to health; and I have known several cases in which apoplexy took place, when the natural hæmorrhage ceased to recur. The urine has much the same appearances as in the acute form of the disease. A chronic cough and expectoration are frequently met with, and depend upon the state of the bronchial membrane.

The calcareous depositions which are so frequently found about the smaller joints, and which go under the name of "chalk-stones," are oftener formed in this species of gout than in the acute. The humoural pathologists believed them to consist of indigested gouty matter thrown upon the joints, and changed into their peculiar state of hardness by the heat and pain of the joint, but they are now known to be a compound of uric acid and soda. "These gouty concretions, (says Dr. Scudamore) occurred only in a few individuals of particular gouty idiosyncrasy, and are found in various situations from within the synovial membrane of the joint, even to the layers of the cutis. I have found them in the living subject, filling the bursæ, and condensed to great hardness; in the sheaths of tendons, feeling almost stony; in the cellular membrane, either in hard or soft lumps; and under the cuticle, pressing for escape. In one gouty person who comes under my frequent observation, the concretions near the surface have caused numerous ulcerations both in the hands and feet, and the chalk-like matter is constantly secreted."

#### PHENOMENA OF RETROCEDENT GOUT.

It sometimes happens, that, during a fit of gout, the external inflammation suddenly disappears, or, at least, becomes very much mitigated, while the patient is affected with lethargy, stupor, coma, apoplexy; or with severe pain in the head, and other symptoms indicating inflammation, or some other cerebral affection.

At other times, on the recession of the gout, difficulty of breathing, with tightness in the chest, great oppression at the præcordia, and a sense of suffo-



cation, followed by cough and expectoration, take place ; or violent palpitation, pain, and constriction in the region of the heart, accompanied by oppressed breathing, cough, &c. indicating disease of some part or parts of the viscera of the thorax.

In another set of cases, the translation takes place towards the abdomen with symptoms of gastritis, hepatitis, enteritis, peritonitis, or dysentery ; and in some cases, the urinary organs are involved. Dr. Scudamore thinks "the transference is most disposed to affect the stomach or intestines, or both in succession. The symptoms which attack the stomach are exquisite pain and spasm, with vomiting. If the intestines be more distinctly affected, enteritis in its worst form is produced ; and vomiting, which is a usual attendant, is more or less urgent, according as the seat of disease is near or distant from the stomach. In either case, the danger is pressing : and unless relief be speedily rendered, death soon closes the scene."

Dr. Cullen (Par. 532) observes, "that the stomach, which has so universal a consent with the rest of the system, is the internal part that is the most frequently, and often very considerably, affected by the gout. The paroxysms of the disease are commonly preceded by an affection of the stomach ; many of the exciting causes act first upon the stomach ; and the symptoms of the atonic and retrocedent gout are most commonly and chiefly affections of the same organ."

Dr. Mason Good, (vol. 2. p. 630, 2d ed.) makes the following observations : "It sometimes happens, however, that while the general constitution of a podagric patient is tolerably sound, one or more of the internal organs form an exception to the general rule, and are less healthy than the rest. And as, upon an excitement of gouty inflammation in a gouty habit, the inflammation seizes ordinarily upon the weakest part of the body, it makes its assault upon such organ rather than upon the hands and feet ; or, if it commence in the latter, is readily transferred to it ; constituting the third of the varieties before us, and which has usually been called *RETROGRADE OR MISPLACED GOUT*. And if the general system should, at the same time, be below the ordinary tone of health, when the paroxysm is thus excited by the force of some occasional cause, the organ affected may evince great languor and painful inertness, as in the second variety, rather than acute inflammation, as in the first. The sensation in the stomach, instead of being that of a fiery coal, is that of a cold lump of lead ; in the head it changes from maddening pain to oppressive horror, in which the patient suddenly starts from sleep almost as soon as he has begun to dose, from the hideousness of the ideas that rush across the mind, and from the distracting dream.

"The fit is sometimes transferred to the bladder, in which case there is acute pain at the neck of the organ, stranguary, and a discharge of thin acrid mucus from the urethra. The rectum has also occasionally been the seat of metastasis, and has evinced various species of affection, as simple vehement



pain, spastic constriction, or hæmorrhoidal tumours. When thrown upon the lungs, it *mimics* the symptoms of a peripneumony."

There is a great deal of good sense displayed in the above passages, but it is mixed up with some mysterious expressions, which may throw young practitioners off their guard, and therefore must be noticed. When Dr. Mason Good speaks of the second variety of retrograde gout, in which the organ affected is represented to be "*below the ordinary tone of health, evincing great languor and painful inertness, instead of more violent symptoms, as in the first variety,*" one accustomed to see much of disease, and to open the bodies of those who have fallen victims to it, would be led to imagine the author was not aware that inflammation may exist in various degrees of intensity; and that, modified by some peculiar, but unknown causes, inflammation of similar intensity and extent will give rise in one subject to violent symptoms, while in another they have such an opposite character, that although the patient is observed to labour under some degree of suffering, yet the symptoms are not so striking as to attract the same degree of attention. These passages would lead one to imagine that the author of this learned and laborious work was not aware that inflammation of different tissues gives rise to a different cast of symptoms as to violence, which is particularly exemplified in the serous and mucous membranes, which last are so very frequently involved in gout. I must enter a strong protest against the expression used when speaking of retrocedent gout, viz. "When thrown upon the lungs, it *mimics* the symptoms of a peripneumony."

Dr. Scudamore states, "that Dr. Home of Edinburgh, in his lectures, relates the case of a gentleman, who exposed himself to the influence of wet and cold when the gout was slightly present in the feet: and on the same afternoon, enteritis followed, which in twelve hours proved fatal." He also states, that Dr. Parry informed him, "that in the same winter he has seen two instances of extravasation in the brain, from the removing of gout in the extremities, by immersing the feet affected in cold water."

Unless from similar rash practice, or from imprudence on the part of the patient, I conceive that such sudden translations of the inflammation, or what is the same thing, sudden alterations in the balance of the circulation, during the paroxysm of gout, are among the rarest occurrences to be met with in practice, unless indeed there have been previous disease in the organ to which the translation takes place. A person of gouty habit may be seized after exposure to cold and damp, with slight inflammation of the brain, lungs, or of any other organ, when his bowels are constipated and his system plethoric; gouty inflammation of a joint may supervene, and mitigate for a time the internal disorder, the attention of the patient and of the physician being then exclusively attracted to the external inflammation; and subsequently, upon the subsidence of the inflammation in the joint, or from mismanagement, such as plunging the foot into cold water, the internal disease may re-appear, perhaps with increased violence, or, what is all the same, when the patient is weaker,

and not so well able to stand the remedies as he would have been a few days previously. Or it may happen that an individual may be affected with a permanent organic disease of the heart or lungs, and may be at times seized with gout, when he will be every moment in danger of the inflammation receding from the joint. I once casually met with a gentleman, in many respects a hypochondriac, and who was so considered, at least according to his own account, by his medical attendant. He had a very foul tongue, and acidity of stomach, which he said he had not been without for years; he also added, that he had a tightness about his chest, which was certainly increasing; and that he never had a good night's rest, in consequence of frightful dreams. I satisfied myself from the state of the pulse, and that of the heart's action, that he had enlargement complicated with dilatation of that organ. In the course of a few months afterwards, he was seized with gout, and died during the attack from retrocession; his death was attributed by his medical friends to "spasm of the lungs;" whereas all the symptoms immediately preceding death appeared to accord with the opinion which I had formed to myself. I anxiously looked forward to the examination of the body of this patient, and took an opportunity of urging its propriety, but received the following reply—"What would be the use of opening a man who died of gout?"

In the year 1830, I attended a gentleman, who, after an illness which I knew to proceed from extensive disease of the heart, with which he had been slightly affected for several years, was seized with gout in the lower extremities. The external inflammation was very unsteady in its seat, sometimes affecting one joint, sometimes another; but whenever there was little external inflammation, he became instantly affected with difficulty of breathing, occasioned by bronchitic inflammation, or violent palpitations, with constriction, and sense of suffocation. Twice the translation took place to the brain; on one occasion he became frantic, talked loud, and abused those about him; and on another, he exhibited a strong tendency to coma. At these times relief was produced by the application of leeches, but principally by causing external irritation. At last, after spending a quiet night, with much refreshing sleep, taking nourishment at proper intervals, and when every thing appeared to be going on well, he became affected with difficulty of breathing, and died in a moment. Immediately previous to the fatal event, he expressed his own satisfaction at the relief he had experienced, and the prospect of a speedy recovery. I made every effort to obtain an examination of the body, but failed, in consequence of a promise he had extorted from his wife; but there could be no doubt that there was hypertrophy with dilatation of the heart, disease of the valves, and that there had been bronchitic inflammation.

#### CAUSES OF GOUT, AND PATHOLOGICAL OBSERVATIONS.

Dr. Scudamore has written a considerable number of pages on the causes of gout, to which I beg to refer my readers for a great deal of very valuable

information, as it would be inconsistent with the plan of this work to enter so much at large into the subject as he has done.

The first question that naturally suggests itself is,—Whether or not the disease is hereditary? According to Dr. Cullen, it is expressly defined to be —“*Morbus hereditarius, oriens sine causa externa evidente,*” &c. Guided by nature, instead of books, I have observed that gout is more an acquired than a hereditary disease. Dr. Scudamore instituted an investigation to ascertain the fact, and of one hundred and thirteen patients, the number of those in whom the disease was hereditary from the father, amounted to

_____ mother,	-	-	-	-	-	9
_____ father and mother,	-	-	-	-	-	3

Of those whose grandfather only had gout, the disease completely hopping over one generation,	-	-	-	-	-	6
_____ grandmother only,	-	-	-	-	-	1
_____ uncle only,	-	-	-	-	-	3
_____ aunt only,	-	-	-	-	-	1

Gout not known either on the father's or mother's side, - - - 58

From this statement, it appears that the cases of acquired gout, in which no family reference could be traced, were to the rest as fifty-eight to fifty-five; and in the examples contrasted with those *immediately* hereditary, as fifty-eight to forty-four. My own experience corroborates the above statements, but it is generally viewed as a hereditary disease; and this has arisen, I imagine, from the habit which too often obtains among medical men, of drawing general conclusions from one or two facts, such as the following:—A gentleman in affluent circumstances, very fond of the pleasures of the table, and taking little exercise, will generally be found to be afflicted with the gout; and because his son, living exactly under the same circumstances, perhaps enjoying greater indulgencies, and being fully more indolent, also has the gout, it is marked down immediately as a strong proof of the hereditary nature of the disease. But if the case were somewhat altered, if the father, however gouty he might be, were to experience a reverse of fortune, and his son were obliged to break stones on the road, or to earn his bread by any other kind of severe labour, then there would be about a hundred chances to one, that, whatever diseases he might be heir to, he would never have the gout.

Gout is notoriously a disease of the rich, or rather, I should have said, of the affluent and indolent, who induce a constitutional plethora by living in a too luxurious manner, pampering the appetite, and overloading the stomach with different articles of food at each meal,—who do not take sufficient bodily exercise, or attend to the state of their bowels,—and who stimulate their systems in every possible way, till at length their bodies may be said to resemble a house filled with highly combustible materials, which requires but the addition of a small spark to set it in flames. Dr. Scudamore observes, that in Scotland gout is much more rare than in England, and that in Edinburgh, where the habits of the people approach the nearest to those of Lon-



don, it is seen most frequently; while in Glasgow the gout is very rare, even amongst the highest classes, which he ascribes partly to the greater activity of the people, and the better regulation of general habits; but he gives a sly hint, that the exemption may be owing also to the use of Glasgow punch, which is a more general beverage at the best tables than wine!! The truth undoubtedly is, that gout is comparatively rare among the middling ranks in Scotland, and that it is not nearly so frequent among the rich, as in the same class of society in England; and one cannot help feeling proud at being connected with a country whose population, from the highest to the lowest, are bent upon giving their children a better education than they themselves have received. Many a man in a humble walk of life is delighted with the thought that one of his sons may possibly some day fill a pulpit, or be physician to some great embassy, or raise himself, by integrity and assiduity, to be a first-rate London merchant, or be sent to India, and become a rich Nabob. These are far greater sources of delight to the humble Scotsman, than pampering his own appetites. It is thus he raises the moral and intellectual character of his country, and prevents himself from being teased and tortured by many a bodily infirmity. A word respecting the Glasgow people, and the Glasgow punch. I know that the statement made by Dr. Scudamore is generally believed, but the truth is, we do not often meet with gout in Edinburgh in any class of society; and however unfrequent it may be in Glasgow, I am quite sure the habits of all classes of society in Edinburgh will at least stand a comparison with those of the inhabitants of that flourishing city.

The gout attacks males much more frequently than females; but some of the most severe and tedious cases of gout I ever attended happened in females; and during the course of the summer of 1830, a female had a severe attack, which was protracted for three months. She was very little benefited by any mode of treatment, till the parts affected were literally covered several times with leeches, after which she speedily recovered.

With respect to age, it has been remarked from the time of Hippocrates downwards, that it is a disease which, if it ever do occur, is rare, before the age of puberty. I have known one case in a boy, the son of a scientific friend, who, do doubt, had an attack of gout at an early age. As a general statement, the correctness of the following paragraph from Dr. Scudamore may be depend on:—"I have not myself witnessed more than one example of a first attack before twenty, nor any after sixty-five."

I have seen the gout attack individuals of every kind of temperament, complexion, and disposition; and with respect to severe study, I am sure this is much over-rated by writers as a cause of gout. "This cause, (says Dr. Scudamore,) comprising not only want of exercise, lateness and irregularity in the hours of rest and sleep, but also its consequences, weakness of the stomach, and inactive bowels, by its effects on the nervous system from the *over-action of the brain*, produces that form of irritative debility, which increases the susceptibility of the frame to disease, and consequently to gout, if such be the predisposition



of the individual." I admit that people of studious habits, who eat and drink a great deal more than the wear and tear of the body require, will be liable to gout; but I do not consider it in any way connected with the over-action of the brain, which is certainly more conducive to health and longevity than indolence of mind, all other circumstances being the same. For example, I know one gentleman most intimately, with a strong hereditary title to the disease, who, for many years, has had his mind intensely engaged in scientific pursuits. During that period, he has scarcely ever enjoyed more than five hours sleep in the twenty-four,—and has often been two or three days and nights without being in bed, sometimes indeed four or five,—his constant habit is to set over the "midnight lamp," till two, three, or four o'clock every morning; and yet, were he going to insure his life, he could obtain a policy at half the premium he could have done twenty years ago, with all the difference of age. He has preserved himself by rarely drinking any thing except good table-beer; avoiding loading his stomach; and regulating the quantity of solid food to the exercise which he has enjoyed, the state of his bowels, and the degree of mental effort which he knows he must make after dinner. It may be mentioned as a hint to others, that when he has to apply his mind most assiduously, he prepares himself for the exertion, not by taking a very hearty meal and a more liberal allowance of wine, but by eating less than usual and taking no stimulant whatever, although he can, when necessary, enjoy his friend with a good dinner and a bottle of wine, as well as any other person.

All excesses in eating and drinking are bad for the animal system, and render it liable to disease; but overloading the stomach with different kinds of food at every meal, is, I am persuaded, far more frequently the cause of gout than overdrinking. Nevertheless, every habit which tends to produce plethora, combined with irritation of the stomach and bowels, may be considered as causes of gout. There are some kinds of wines, which, taken even in a moderate quantity, gouty subjects always feel; these are, more particularly, champagne and claret.

Upon the whole, then, I look to a diseased state of the mucous membrane of the stomach and bowels, as produced by all the above causes, either singly or combined, in addition to a plethoric state of the system, as being the cause of a gouty paroxysm. I believe that the seat of the gouty inflammation is in the nervous filaments of the part affected; but various opinions have prevailed upon this last point. Boerhaave considered a morbid texture of the nerves and capillaries to be the disease. The humoral pathologists supposed that it depended upon an acrimonious state of the fluids which are separated, and thrown off by a process of nature; and they considered the inflammation in the extremity to be a sign of a revulsion of the humours, and therefore regarded it as a mark of health.

Dr. Cullen was of opinion, that "in some persons there is a certain vigorous and plethoric state of the system, which, at a certain period of life, is liable to a loss of tone in the extremities. This is in some measure communicated

to the whole system, but appears more especially in the stomach. When this loss of tone occurs while the energy of the brain still retains its vigour, the *vis medicatrix naturæ* is excited to restore the tone of the parts; and accomplishes it by exciting an inflammatory affection in some part of the extremities." (Par. 533.) Thus it will be perceived, that here, as well as in fever, he makes strength to depend upon weakness, and weakness upon vigour and plethora of the system.

According to the views which I have taken of gout, it should be regarded simply as an inflammation of the affected part, produced by an effort of the constitution to remove disease from internal parts to the surface of the body. Therefore the inflammation of the toe is not to be regarded as a disease, but only as the occasional symptom of a disease, which may be one either of function or of structure. This is proved by taking a retrospective view of the causes of gout and the marks of constitutional disturbance, which always precede the inflammation of the part,—by the production of a great increase of internal suffering, sometimes even death, from the sudden recession of the external inflammation,—and by the universal belief of those who have either seen the disease or experienced its sufferings, that a gouty paroxysm clears the system of something, which had been acting injuriously upon it for some time.

The body may be in a very high state of predisposition to take on gouty action, but it requires some additional accidental circumstances to bring it into operation; this is what is called an exciting cause, of which there are many; but the following are the most frequent. Exposure to cold and wet, particularly when the body is in a state of fatigue; long-continued coldness of the extremities; constipation; indigestible matter taken into the stomach; a cold drink when the body is heated; a particular act of intemperance, more especially indulgence in the use of certain kinds of wines; excessive evacuations; suppression of periodical discharges; the influence of the passions, a strain, or pressure from a tight boot or shoe, &c.

*Treatment of gout.*—In the treatment of gout, it is to be feared that much mischief is frequently done by large and repeated bleedings, under the idea that this disease depends upon an internal affection of an inflammatory nature. Injurious consequences have also followed from the opposite course of never bleeding, the practitioners treating the symptoms as the disease, which they supposed to possess some peculiar and mysterious character, rendering all interference hurtful, even dangerous, and therefore dooming the patient to Dr. Cullen's remedy of *patience* and *flannel*. Many highly respectable men still entertain this opinion; and it becomes an important inquiry to ascertain how this should have come to pass. Many people are guilty of pinning their faith to the sleeve of Cullen, never once calling their own good sense into action. Heroic remedies, if not loudly called for by threatening symptoms, may undoubtedly interfere with the salutary operations of nature. Many practitioners, I am sorry to say, treat every disease which comes before them

according to its name, and not according to sound pathological principles, including the consideration of age, constitution, habits, and duration of the disease. Some patients are therefore bled who do not require it, and the consequences are injurious; others are bled who cannot bear it, and who ought to be treated by cordials, and the result is fatal; many patients are over-purged with drastic medicines, to the aggravation of the disease, while others are bunged up with opium. Some patients are highly nourished and over-stimulated, because the doctor thinks gout a disease of debility, which, in all cases, requires nourishment; and as the heart is unable "to pump the blood to the brain, which may produce fatal syncope," the strongest stimulants are necessary to effect that end. Such practitioners never alter their practice, they have one method of treatment for all cases. There are also reasons why the public in general entertain a dread of interfering with the course of a gouty paroxysm. It may be prejudice handed down from father to son, and the notion very probably owes its existence to statements made to that effect in medical writings. But the principal reason appears to be, that many people ruin their constitutions, and some even die suddenly, from being in the habit of going on indulging their appetites, because they know they can relieve themselves very speedily during a paroxysm, by the use of *colchicum* or the *eau medicinale*. There is a very satisfactory method of explaining why gout should be imagined, by people unacquainted with medicine, to be ultimately conducive to health, and to rid the constitution of something noxious. Observing people perceive, that some constitutional ailments, such as indigestion and its attendants, always precede a gouty paroxysm; and after that the fit subsides, these no longer exist. Now, this is no doubt correct, the external inflammation has the effect of relieving the internal disease. But there is another circumstance which is not observed, or which is lost sight of, and that is, that persons who have suffered the agony attending a paroxysm of gout, subsequently, for a considerable time at least, avoid all causes which they know will expose them to the return of such a torturing visitor; they also attend to their bowels, and take more exercise. I know many, even highly predisposed persons, who have thus warded off the disease for years.

Regarding the disease according to the views I have endeavored to point out, the treatment is generally quite simple.

In a first paroxysm of gout, and in all slight cases, little constitutional treatment is necessary, further than keeping the bowels gently open by any mild laxative exhibited every six or eight hours, and restricting the diet to small quantities of farinaceous food, or merely allowing thin gruel or arrow-root: and the best ordinary drinks are whey, barley-water, or toast-water.—The patients are to be kept cool and quiet, and if the pain and inflammation of the affected part be slight, a tepid evaporating lotion composed of three or four ounces of tincture of camphor to a pound of water, is to be applied to the part, by means of linen several times folded, and kept constantly wetted. This does not differ from the lotion recommended by Dr. Scudamore, which



consists of one part of alcohol to three parts of the *mistura camphoræ*, and which, he says, he has used with great satisfaction to himself, and with the best success, and he recommends its temperature to be from  $75^{\circ}$  to  $85^{\circ}$ .

In more severe cases, however, venæsection may be required, but should never be adopted upon slight grounds, even if the patient is plethoric. The circumstances which serve to render general bleeding necessary, are symptoms threatening an apoplectic attack, or showing the existence of inflammation in some internal organ; and as Dr. Scudamore justly remarks, "in the circumstances in which bleeding is a proper remedy, its *early* employment is a point of much importance. When delayed, it will be found that the depression of strength, resulting from the excessive irritation of the nervous system, counteracts its advantages in a great degree." The pulse, in some measure, affords a guide; if it be full and hard, accompanied with a hot skin, thirst, and scanty high-coloured urine, general bleeding can rarely do harm; and it is absolutely necessary if inflammation of any internal organ exist. The quantity of blood which ought to be abstracted, is to be regulated by circumstances that have been already fully considered when treating of many other diseases; but so cautious should we be about opening a vein, that I would strongly recommend, in the first instance, the application of a considerable number of leeches to the affected part, if much local inflammation exist. This practice is recommended because it seems to be following the course pointed out by nature. In determining the number of leeches that may be necessary, it is much safer to err by applying two or three too many, than too few, because, if a sufficient quantity of blood be not drawn, the advantages from the depletion are counterbalanced by the additional irritation from the bites. But we must always keep in view, in the treatment of gout, that the disease is produced by constitutional causes, and is not to be altogether relieved by local means. The practice of leeching the part affected is noticed by Cullen, and has, in some measure, received his sanction, although it would seem he had not often employed it. In Par. 563, he says: "I believe, however, that bleeding by leeches upon the foot, and upon the inflamed part, may be practised, and repeated with greater safety (than general bleeding); and I have known instances of its having been practised with safety, to moderate and shorten paroxysms; but how far it may be carried, we have not had experience to determine."

Emetics have been extolled by some, but are only to be administered if indigestible food is suspected to be lodged in the stomach, and when there are distressing irritation from slight nausea, and hot acid eructations.

Mercurial preparations are to be occasionally given in conjunction with laxative medicines, particularly if the stools show either a deficiency of bile, or are dark-coloured and fetid. It is immaterial whether we use calomel or the blue-pill; sometimes, indeed, when the liver seems implicated, a slight mercurial course is necessary.

In cases where there is burning heat at the pit of the stomach, or other



signs indicating inflammation, or even a high degree of irritation of the mucous membrane of the stomach and bowels, a sufficient number of leeches must be applied, or cupping had recourse to, followed by rubefacients or blisters. I have often seen considerable benefit in cases which indicated, not only the existence of abdominal, but also of thoracic disease, by producing two or three successive crops of eruptions, by means of the tartar-emetic ointment.

Opiates are highly serviceable in allaying pain, and producing sleep, and have been in greater favour with practitioners than any other class of remedies; but they are inadmissible, before the bowels have been sufficiently relieved,—when the patient is threatened with apoplexy, or any other cerebral affection,—and, indeed, when there is local inflammation of any internal organ, unless they be conjoined with the remedies necessary for its cure. When opium disagrees, hyosciamus may be substituted.

Many years have not elapsed since the *eau medicinale* was in high repute, but it has now shared the fate of the Portland powder, and of all other pretended specifics for gout.

The *colchicum autumnale* has been highly recommended during paroxysms of gout, and has been used with the best effects, not only in alleviating the immediate sufferings of the patient, but in breaking the severity of the disease; but it has no claim to the title of a specific. There is considerable difference of opinion among practical men as to which preparation of colchicum is the most efficacious. Some recommend the powder of the bulb; others, that of the seed; many prefer the wine of the seed; while others extol the acetic preparation. I have used all the preparations, but find a saturated infusion of the seeds in wine to answer better than any other. It is to be exhibited, according to the age and constitution, in doses of from twenty to a hundred and twenty drops, conjoined either with the same quantity of tincture of hyosciamus, or with a half, or even a third part of the sedative solution of opium, which will be found to answer better than laudanum. In some cases, when the stomach is exceedingly irritable, and when the colchicum cannot be retained, leeches may be applied, or a blister, over the epigastric region; and a pill with two, three, or four grains of calomel, and two of opium, may be exhibited. In treating a case of gout with colchicum, it is by no means to be trusted to alone, as if it were a specific; it is necessary to attend to the state of the bowels, and allay local inflammation in the same manner as if colchicum were not employed.

Alkalies are very serviceable when there is acidity in the stomach, or when there is much irritation in the urinary organs, particularly when the urine is high-coloured, and deposits a red, sandy sediment. If it be necessary at the same time to give any laxative medicine, we may use Henry's calcined magnesia, in which are conjoined antacid as well as aperient properties.

During paroxysms of these forms of gout which have been termed "atonic" and "retrocedent," we must treat each case according, not only to the organ

affected, but to the nature or kind of the affection. We must be careful not to confound mere functional disorder with inflammation, an error which young practitioners are very liable to commit, but which is not attended with fatal consequences nearly so often as mistaking inflammation for the other class of affections.

In cases where pain and inflammation are shifting about from place to place, it is a good plan to leech such parts, as well as to produce counter-irritation on the chest if respiration be at all affected, or the patient troubled with palpitations; and on the epigastric region, if there be evidence of much gastro-intestinal irritation. Should inflammation attack any organ, it must be treated upon general principles, always, if possible, making use of leeches or applying cupping glasses instead of venæsection, unless the patient be young and plethoric, or there be signs of local congestions, or unusual determinations of blood to any particular organ.

#### MANAGEMENT OF GOUTY SUBJECTS DURING THE INTERVALS.

As soon as a gouty paroxysm begins to subside, it is our duty to make the patient aware of the usual progress of gout in undermining the constitution; in order that he may the more readily submit to directions which he is to receive for his future management. It ought to be impressed upon him, that medicines can be of little comparative service, unless he live abstemiously, and alter many of his habits. Perhaps the point of most importance is a proper regulation of the diet, so as to make it correspond to the degree of his daily exercise. I am aware how impossible it is to prescribe a proper diet for each individual, until we come to know his peculiarities of constitution and previous habits; but there are certain general directions which it is advisable to give in all cases, in the first instance at least, which can be modified and changed afterwards, according to circumstances.

At breakfast the patient may be allowed one large breakfast cup of milk, tea, coffee, or chocolate, according to his taste, with an egg, and bread and butter. Meat and fish should be interdicted at this meal, which should be taken at eight o'clock in the morning, to ensure his rising early, as well as for the purpose of regulating the hours for the other meals. From that time he should take nothing till dinner, which should be about two o'clock, when he may be allowed a moderate quantity of animal food, not exceeding from a quarter to half-a-pound, cooked in a plain way, perhaps on a gridiron is the best, with as much stale bread as he chooses, and a small quantity of any of the ordinary vegetables that agree with him; but he must dine upon one dish, particularly for some time after a paroxysm. At any subsequent period, should he wish to partake of two articles at one meal, the quantity of each must be regulated in such a manner that the stomach is never over-distended. Should he take fish, it must be eaten without melted butter, a good substitute for which is meat gravy; and the reason why vegetables should be avoided as much as possible is, that they tend to produce flatulency in the stomach and

bowels when their functions are in a weakened state. For drink, I believe that good sound table-beer will be found to agree very well with the generality of people, if it be not hard, or too weak, and if it be taken in moderate quantity. If beer should disagree, a desert-spoonful of brandy in a tumbler of water, will be found a very good substitute. With respect to wine, the use of it depends entirely upon former habits; were old gourmands deprived altogether of their usual stimulus, they would quickly sink; but in young subjects, when the constitution is as yet unbroken, it will be well to advise the patient to avoid the habitual use of any stimulant whatever. At 7 o'clock in the evening, the patient should have another meal, consisting of the same articles as at breakfast; and if he take any thing afterwards, which I do not, however, think necessary, it may be a tea-cup full of gruel at ten o'clock, on retiring to rest. He should sleep in a large well-aired room, with sufficient clothing to make him feel comfortable, but not to produce perspiration, the continuance of which tends to occasion constitutional debility, perhaps more than any other circumstance whatever. It should be ascertained, when the patient goes to bed, that his feet are comfortably warm; if not, friction should be used, or he should be supplied with a bottle of hot water; whereas, if they should be too hot, which is sometimes the case, they should be bathed for some minutes in milk-warm water. A gouty person, in particular, should not sleep on a feather bed, nor should he indulge in the use of soft pillows, more especially if there be any tendency of blood to the head, when his head and shoulders ought to be considerably elevated. The bowels should form a chief object of attention; they must not be allowed to be constipated; but the opposite extreme is fully, if not more injurious. Many individuals are injured by the pernicious habit of taking some strong physic now and then; but it will be invariably observed, that the bowels become afterwards more torpid. All laxative medicines which operate violently, or produce watery stools, should be avoided. Patients should be furnished with different kinds of pills, of which they should regularly take such a quantity as will produce one, or at most two evacuations daily, or a tea-spoonful or two of Henry's Calcined Magnesia, sometimes by itself, at others, joined with six grains of rhubarb, and three or four of ginger.

During the day care must be taken to preserve the feet in a proper degree of warmth; and the patient should at first be very cautious not to use too much exercise, which will not only weaken the body, and derange the functions of the stomach, but will injure the limb which has been recently the seat of inflammation. By degrees the exercise may be increased, but should never be violent, or carried to such an extent as to create fatigue. Till his health is completely established, he should avoid exposure to night air, and at all times carefully protect his body against the influence of atmospheric vicissitudes.

At any period that digestion becomes impaired, which will be indicated by a loaded tongue, and a sense of fulness and distension after meals, patients

should not depend so much upon the effects of medicines for relief, as upon the restrictions of diet. I do not mean to undervalue the effects of medicines, because every practical man must be aware how advantageous are a blue pill, or a grain or two of calomel, and a small quantity of extract of colocynth, when the tongue is loaded with a white or with a yellowish fur. These, with the addition of from ten to twenty drops of nitric acid, in four ounces of infusion of quassia, compound infusion of gentian, or in water along with two grains of the sulphate of quinine, once, twice or thrice a-day, are often beneficial. In some constitutions the occasional use of the warm bath will be found serviceable, while in others the cold bath will agree best. There is almost no individual so situated that he cannot obtain the advantages frequently found to result from the shower-bath, which may at first be used warm, and afterwards gradually made more and more cold, as the strength of the patient increases.



## CHAP. II.

### RHEUMATISM.

---

MOST authors describe two, others three varieties of rheumatism, viz. the acute, chronic, and rheumatic gout, which last is so termed from its resemblance to both diseases. The following is Dr. Cullen's definition of acute rheumatism:—"A disease produced by an external cause, which is, in general, known, attended with pyrexia; pain about the joints, following the tract of the muscles, attacking the knees and larger joints, in preference to those of the feet or hands, increased by external heat."

Dr. Mason Good has given the following definition: "Pain, inflammation, and fulness, usually about the larger joints, and surrounding muscles; often wandering; urine depositing a lateritious sediment; fever *a cauma*" (inflammatory.)

#### ACUTE RHEUMATISM.

Although the diseases cannot certainly be identified, yet there are many strong points of analogy between gout and rheumatism. Few men can be long in practice without meeting with cases which have some resemblance to gout, and some to acute rheumatism, so much so, that it is a common enough circumstance to hear practical men speak of "rheumatic gout." Some, indeed, maintain that gout and rheumatism are only varieties of the same disease; while others allege, that although they are not exactly the same, yet the one often passes into the other.

Acute rheumatism generally attacks young people, or those rather below than above middle age, after long exposure to cold and moisture, as sleeping in damp sheets, remaining long in wet clothes, particularly after fatigue, or from changing winter clothing too early in spring, to which people are often tempted by a few successive days of warm weather.

*Symptoms of acute rheumatism.*—After exposure to some of the above mentioned causes, the patient complains of rigors or chilliness, with a general feeling of numbness, pain, or aching; febrile symptoms soon follow, when the skin is pungently hot, and the pulse quick, full, hard, and bounding, even in weakly subjects, and will be found to beat from 100 to 140, perhaps even higher. As the febrile symptoms increase, the pain becomes more acute; it

is generally an aching or gnawing pain, with numbness and powerlessness, and it sometimes even possesses the pungent, hot, lancinating character of that of gout. The pain is sometimes general, but some one joint is more intensely affected than the rest; and we also see translations of the disease take place, which are so frequently observed in gout. In acute rheumatism, the parts affected usually become red, swollen, and tender to the touch, although in some cases it is observed that the redness and swelling are slight in comparison to the degree of pain. The least motion aggravates the pain as in gout, and it often shoots with great severity, either along the course of the muscles, or the nerves and their ramifications.

Sometimes local pain exists before the general febrile commotion, although this is rare, unless a patient with chronic rheumatism, from imprudent exposure or other causes, excites the acute form of the disease. The pain and febrile symptoms abate and increase irregularly; generally speaking, however, the patient is most tormented at night, which circumstance is observed in almost all other diseases. The muscles often feel hard, rigidly contracted, and sore to the touch; the intercostals are occasionally affected in such a manner as to resemble in every respect an attack of pleurisy, which has been already noticed when treating of that disease, under the term "Pleurodinia." The muscles of the abdomen are occasionally painful to the touch, without hardness of the part, so as to resemble peritonitis; the muscles of the back are often affected also, the complaint being well known by the term "lumbago." Another affection, either of the sciatic nerve, or of the muscles which pass from the trunk to the lower extremities, sometimes takes place, which is called "sciatica." These latter affections, however, very frequently occur without fever, unless during the night, and are usually described under the head of chronic rheumatism.

In acute rheumatism, the tongue is generally loaded, often red, particularly round the edges; the appetite is destroyed; the thirst excessive; the urine scanty and high-coloured, depositing a heavy sediment, as in gout. There are sometimes nausea and vomiting, with considerable internal heat, particularly in the epigastric region, with irregular, generally costive bowels, and fetid evacuations. At others, there are headache, with intolerance of light, and sometimes even inflammation of the eyes, which is well known to attack a particular part, viz. the sclerotic coat. On other occasions, symptoms of cerebral irritation or inflammation take place; and it is well known that dissection has frequently and unequivocally revealed an inflammatory condition of the membranes of the brain. But the pericardium of all parts is the most liable to the occurrence of inflammation during the course of rheumatic affections,—a most insidious disease under any circumstances, but more particularly so, when the attention of both patient and practitioner is attracted to the pained joints. The skin is generally dry and hot in acute rheumatism, but is sometimes bathed in a clammy sweat.

In the consideration of all diseases, after becoming acquainted with their

phenomena, the most important point is to determine their nature and seat.—With respect to acute rheumatism, some allege that it is a disease of the sanguiferous, others of the nervous system. My own opinion is, that both systems are deeply implicated, but that the real nature of the disease is inflammatory. All the symptoms prove this position, for even in the weakest subject the pulse is quick and strong; the fever is undoubtedly inflammatory; the affected part generally possesses all the characters of inflammation; and blood, when drawn from a vein, shows an inflammatory crust.

It would be interesting if we knew whether the inflammation were situated in the cellular substance, in the muscles, nerves, blood-vessels, or lymphatics. That the inflammation is not seated in the cellular substance is rendered probable, from its rarely terminating in suppuration, ulceration, or gangrene. I cannot pretend to determine the seat of the inflammation; but from the quick translations which take place, and the resemblance which rheumatism in many points bears to gout, it is very probable that it involves the nervous filaments more considerably than any other tissue. But I have seen cases which presented symptoms similar to those of rheumatism, in which, after death, the lymphatics of the limb were found inflamed, and filled with puriform fluid. Many French pathologists have come to the conclusion, that rheumatism is nothing more than acute inflammation of the lining membrane of the arteries.

*Treatment of acute rheumatism.*—Many writers insist much upon the importance of a proper diagnosis between gout and rheumatism; but practical men know how difficult this is in many cases, how impossible in some, and I might add, unprofitable in many, as both diseases must be treated very much upon the same principles, with this exception, that rheumatic subjects bear bleeding better than gouty, and that in them it is generally more beneficial.

The following diagnosis has been drawn between the two diseases:

#### *Gout.*

Gout is a disease which rarely attacks the young; males are more frequently affected than females.

Gout is more connected with some internal disease, more particularly with disorder of the viscera connected with digestion.

Gout generally infests the smaller joints.

In gout, the pain is burning, pungent, and lancinating.

#### *Acute Rheumatism.*

The young are as liable to this disease, if exposed to its causes, as those more advanced in age, and females as well as males.

Rheumatism frequently attacks people in perfect health, and is always to be traced to cold and moisture, although acute inflammation of an internal organ may be produced at the same time with the original disease, or may be subsequently engrafted on it by translation or otherwise.

Rheumatism attacks the larger joints.

The pain is generally gnawing and numb, occasionally pungent and lancinating.

*Gout.*

In gout the external inflammation is a bright, intense red; the swelling takes place rapidly, and the part is much more sensible and tender.

*Acute Rheumatism.*

In rheumatism, the inflammation is said to be less intense, and the swelling not so great, or, at least, so rapid. It is said also that rheumatism shows more regular exacerbations towards night than gout; and that the pulse is more full, hard, and bounding, which characters it often preserves for a considerable period after the subsidence of the external inflammation.

A great deal of discussion has taken place in the profession respecting the treatment of rheumatism. One set of practitioners depend entirely upon venæsection; another upon purging; a third upon exciting long-continued profuse perspirations; and a fourth upon the exhibition of bark alone: and it is no wonder, under such empirical treatment, that an attack of the disease used formerly to continue violent for such a long period of time. Formerly an attack of acute rheumatism, with its sequelæ, generally confined the patient for twelve months, that is to say, before he regained his ordinary state of health, and few got off with less than six months confinement to bed. Of late years, more common sense pervades the profession, and each case is now treated more upon pathological principles. The best remedy we possess for the cure of acute rheumatism, is venæsection, provided the patient be plethoric, or have an unbroken constitution, and the disease is in its early stages. The general inflammatory diathesis which prevails, the local inflammation in the parts, the highly inflammatory state of the blood, and the knowledge which we have derived from *post mortem* examinations,—all proclaim the propriety of general bleeding in severe cases, in the circumstances already mentioned. The precise quantity of blood to be taken, can only be determined by watching its effects upon the constitution. We frequently, however, meet with people of nervous, irritable habits of body, and others who have been much injured by dissipation, in whom venæsection will in general prove injurious; and I may add, that it will often produce bad effects even in the strongest constitutions, unless it be followed up by proper after-treatment.

The good effects of the tartrate of antimony in small, but frequently repeated doses, so as to keep up slight nausea, without producing vomiting, cannot be praised too highly; but the patient should be lightly covered with bed-clothes, so as not to excite perspiration. I have often employed antimony with great success in cases where general bleeding was inadmissible; but if there be considerable plethora, and a strong, hard, bounding pulse, antimony will have a better effect when venæsection is premised.

Local bleeding by leeches has very good effects, and ought never to be neglected when the inflammation runs high. When leeches are employed, however, a considerable number should be used; and I make it a rule, after the leeching is commenced, to chase the disease, as it were, from joint to joint, pursuing other means of treatment at the same time.



In many cases, decided and immediate advantage will be derived from the employment of colchicum, combined with the sedative solution of opium, or with large doses of the tincture of hyosciamus, precisely in the same manner as has been recommended in gout. It sometimes succeeds after the failure of antimony; but in general I like to try the latter before having recourse to the colchicum.

It is highly necessary, throughout the whole course of the disease, to keep the bowels moderately open, but violent purging is by no means necessary, and is often injurious. If the tongue should be loaded with a white or yellow crust, two or three grains of calomel, continued with four or six of rhubarb, or four grains of colocynth, may be given at bed-time, and the operation assisted next morning by castor oil or an injection.

The old plan of sweating patients for ten or fourteen days, by means of large and repeated doses of Dover's powder, warm diluents, and a load of bed-clothes, is, I hope, now very generally abandoned, as it is attended with the same injurious effects as too frequently repeated and indiscriminate bleedings.

I can say nothing, except in condemnation, of another plan too indiscriminately followed, viz. the calomel and opium treatment. I have often seen the tongues of patients swollen and ulcerated, and profuse salivation produced, without the least signs of amendment.

The Peruvian bark was formerly highly extolled in acute rheumatism, and has been used and approved of by many celebrated physicians of the last age. Dr. Haygarth came to the conclusion, that "bark does not cure an ague so certainly and so quickly as it does the acute rheumatism." It is impossible to reconcile such a statement with the opinions maintained by others respecting the same medicines. "The Peruvian bark (says Cullen, par. 469) has been supposed a remedy in some cases of this disease; but we have seldom found it useful, and in some cases hurtful." I formerly tried bark in all its forms, and my experience exactly corresponds with that of Dr. Cullen; in fact, I have never seen it useful, except in one case, when it was employed after copious venæsection. There can be no doubt, however, that cases may occur, in which the sulphate of quinine will be found beneficial, where the bark in substance would prove injurious, and the infusion, or any other preparation, too weak to have any effect whatever; and there is much good sense and discrimination in the following passage from Cullen. Speaking of bark, he says,—"It appears to me to be fit in those cases only, in which the phlogistic diathesis is already much abated, and where, at the same time, the exacerbations of the disease are manifestly periodical, with considerable remissions interposed."

With regard to stimulants, such as gin and brandy punch, and a bottle or two of port wine daily, which are so generally prescribed by some, I shall say nothing. It is to be regretted, that the laws applicable to medical men in China, cannot be had recourse to in this country.

Blisters ought never to be employed in acute rheumatism, at least in the early stages, unless there be evidences of the existence of pericarditis, or inflammation of some other internal organ.

Fomentations are seldom serviceable, and the warm bath is often injurious, in acute rheumatism, from the increased pain produced by the motion which it requires. The sulphurous vapour bath, however, has been much praised by several individuals, but in looking at a table of M. Galé, I find nothing to recommend it. The plan was tried in sixty-five cases, of which twenty-five only were cured, thirty-two were stated to have been much relieved, and eight derived no benefit from the remedy.

The diet should be antiphlogistic during the acute stage, and farinaceous and unstimulating for some time after, until the pulse ceases to be full and bounding. After the patient has been for some time convalescent, when the limbs are stiff, and the joints somewhat rigid, good effects will be occasionally produced by general cold bathing; but the health and strength must be, in other respects, quite restored, and all the functions natural. Frictions with a hair glove are also to be persevered in.

#### CHRONIC RHEUMATISM.

This form of rheumatism sometimes succeeds the acute disease, and may be confined to one part of the body, or may be general. The patient complains of a dull gnawing pain, increased on motion, with little or no fever or local inflammation. There is frequently swelling about the joints, and occasionally contraction, and the muscles are sometimes rigid. The pains are often relieved by the application of heat, but are always aggravated by exposure to cold damp air, and occasionally also by the application of heat, so that frequently patients pass painful and restless nights.

In this form of the disease, the warm water and the vapour bath, together with rubefacients, are found more beneficial than in acute rheumatism. The Russian plan of treatment is said to be decidedly superior to any other, which is to expose the patient to vapour at a very high temperature in a room, where the evaporation of water is produced, by dashing it upon stones intensely heated. After this has been persevered in for some time, the patient still remaining in the same apartment, small quantities of cold water are dashed upon the parts affected; the body is afterwards well rubbed. I am told by a gentleman who has undergone the process, that the relief is very decided.

If there be any fever, the antimonial treatment will be found beneficial, as will colchicum; and, in several cases, I have seen permanent advantage produced by the combined effects of the wine of colchicum and tincture of hyosciamus.

It has been already mentioned, that rubefacients are sometimes serviceable, and it may be now stated, that excellent effects have been occasionally observed to follow the application of blisters, but more particularly the counter-

irritation produced by antimony ointment, and moxas, a remedy in great repute on the continent.

Train oil, obtained from the liver of the cod-fish, is highly extolled by Dr. Percival, and has since been used by other individuals, particularly by Dr. Bardsley, who exhibited from one to three table-spoonsful daily. I have seen it tried, and persevered in for some weeks at a time, without observing any benefit whatever from its use; and I can only wish a few doses were exhibited to those gentlemen who have the patience to prescribe it for others.

The arsenical solution and bark have been recommended, when the disease shows any tendency to periodicity.

Of late years acupuncture, which is said to be an Eastern remedy for this disease, has been employed in various parts of Europe for the cure of chronic rheumatism, and with most astonishing good effects; the operation is said to produce little or no pain, and no hæmorrhage. A single puncture has been found sufficient to remove an ache of some years duration; generally from two to six sharp-pointed needles are used at once, and are pushed at a little distance from each other into the affected part, to the depth of half an inch, and, in fleshy parts, even of an inch; each needle is allowed to remain for about five minutes before it is withdrawn. It is observed that the pain sometimes leaves the part into which the needles have been introduced, and flies to another; but we are told to follow it with the instrument.

Lumbago and sciatica appear to me to be more decidedly of a nervous nature than any other, and are to be treated in the following manner:—viz. By gentle laxatives, frictions, and rubefacients, and the frequent use of the hip-bath. But what answers fully better, is to pour a small stream of very hot water over the part affected, the patient being placed in a comfortable posture, either sitting on a bidet, or any convenient article to receive the water, which should be heated to 130° or 140°. In fact, it should be so hot that the finger cannot be kept immersed for any time. Acupuncture may also be necessary in sciatica, which is the most intractible of the two affections, although commonly not so severe. I have seen the best effects produced even in old standing cases, by wearing a chamois-leather jacket and drawers, in all the forms of chronic rheumatism. It is of the utmost consequence to regulate the diet, as relapses may be frequently traced to indigestible articles of food. It is said that individuals previously liable to attacks of lumbago and sciatica, have escaped further annoyance by wearing a piece of stick-sulphur in their breeches pockets, and it is well known that the internal use of sulphur is a popular remedy for all forms of rheumatic complaints.

#### RHEUMATIC GOUT.

I do not consider it necessary to give a description either of the phenomena of this disease or its treatment, as it is sufficient for all practical purposes to refer to what has been already said respecting gout and rheumatism.

## CHAP. III.

### SCROFULA.

---

DR. CULLEN has given the following definition of scrofula:—"Enlargement of the conglobate glands, especially in the neck; the upper lip, and columnæ nasi, and lower part of the nostrils, tumid; the face florid; the skin soft; the abdomen enlarged."

Dr. Mason Good, who applies the term "*struma*" to this class of affections, gives the following definition:—"Indolent, glandular tumours, chiefly in the neck; suppurating slowly and imperfectly, and healing with difficulty; upper lip thickened; skin smooth; countenance usually florid."

The belief is almost universal, that this class of diseases is hereditary, and that it is confined to an unhappy few who transmit it from father to son, from one generation to another, far more regularly than they transmit their money or virtuous reputation. I must confess my scepticism upon this point, as many instances might be quoted where both parents were strongly marked with all the appearances described as scrofulous, nevertheless their children were very healthy. On the other hand, cases are often seen where the parents had no vestige of the complaint, and yet the children were scarcely ever without some of the affections generally denominated scrofulous. Many authors aware of these circumstances, observe, that it is true the parties are not born with the disease, but only with a greater aptitude to receive certain morbid impressions, which may bring the latent disposition into action. This is a very plausible salvo, but it is too vague to be received as medical evidence. They also say, that a remarkable circumstance attending scrofula is, that it does occasionally pass over one generation, and appear again in the next, so "that the grandfather and grandson shall be both scrofulous, while the intermediate person, who holds the most intimate relation of father and son, and connects the two others, shall be exempt from any attack of the disease."

My opinion with respect to glandular affections denominated scrofulous is, that they are generally engrafted on the constitution by improper food, and deficient clothing;—by neglect, or bad medical treatment during the period of dentition; the progress of scarlet fever, measles, and other eruptive fevers, as well as during the ordinary eruptions and affections of the throat. And lastly



that they are produced by mismanaging swollen and inflamed glands during their early stages. Hence it is a disease with which some of the members of almost every family in this climate are at one time or another affected. We see glandular affections in persons of every variety of colour of the hair, eyes, and appearance of the skin, and in every variety of constitution. I have, therefore, long ago persuaded myself that they depend upon gastrointestinal irritation, which point of pathology has been clearly established with reference to the most scrofulous of all scrofulous diseases, viz. that which is termed "*tabes mesenterica*." This view is much strengthened by the following circumstances:—Scrofula is a frequent disease among the poor, and those who are fed upon large quantities of weak broth, coarse ill-baked bread, or hard indigestible puddings. From these causes the disease is often seen in charitable establishments for children; and I have also seen it traced to English boarding-houses, where the children are crammed with hard pudding, before they are allowed even to smell meat, and are told "*that the young ladies and gentlemen who eat most pudding shall have most meat*."—Poor children! Another important fact may be mentioned, that scrofulous affections can be produced in a short space of time in many of the domestic animals, by unwholesome feeding. Thus I have seen them purposely produced in poultry, rabbits, and pigs, by such means. A pig is called "*measly*" when it is affected with a very general disease of the glands throughout the body, which is well known to depend upon the manner in which it has been fed.

It has been my belief for many years, that many of the affections called scrofulous, may, in a considerable number of instances, be traced to the exanthemata. In order to obtain precise facts upon the subject, I requested Dr. Robertson, Surgeon to the Edinburgh Eye Dispensary, to preserve a list of all the diseases of the eye usually denominated scrofulous, as well as those accompanied by glandular and cutaneous affections, usually attributed to scrofulous action, in order to ascertain how many were attributed by the parties themselves or their parents, to the exanthemata, and hooping-cough. Dr. Robertson accordingly directed his attention to this point, and in the course of twelve months informed me, that almost all the cases were attributed by the parties themselves or their friends to those diseases. This investigation took place nine years ago; and Dr. Robertson informs me, that he has seen nothing in his extensive experience since that period, to weaken the effect which it made upon his mind. It may be added, that the result of my daily practice confirms and supports the views already stated.

There seems good ground for the following statement, made by Mr. Lloyd, in his valuable Treatise on Scrofula, p. 7:—"Among the symptoms indicating a disposition to scrofula, it has been already observed, that a fair complexion, and light hair and eyes, are generally mentioned; but I believe there are no legitimate grounds for such distinction. Indeed, I am fully convinced, from a very extensive investigation of the subject, that persons

of every variety of complexion are alike subject to this disease; and that it is only necessary to place them in circumstances favorable for its development, to have it fully established."

The reasons will now appear evident why scrofula is a disease that no one can properly define; every physician having a definition of his own. The term is applied too often to diseased states of the system, with the nature of which the physician is entirely unacquainted; and it is too frequently used for the purpose of concealing professional ignorance, when he is puzzled and foiled in the treatment of disease.

I most heartily coincide with the sentiments expressed by Mr. Lloyd in the following paragraph: "In describing the symptoms indicating a scrofulous diathesis, all the authors with whom I am acquainted have fallen into the error of describing the state of a patient, after the disease has given local evidence of its existence, instead of informing us of the temperament or habit of body of the patient antecedent to this period; a circumstance which I cannot but consider as of the highest importance in our pathological research. Thus they enumerate among the symptoms of a scrofulous diathesis, or which only denote a tendency to scrofula, 'a thickened chapped upper lip, the thickening extending to the alæ of the nose,' 'tumescence and redness of the tarsi,' with weakness of the eyes in general, 'tumid belly,' and 'enlargement of the lymphatic glands, particularly those of the neck.' These, it is true, (continues he,) afford very decisive evidence of the existence of the disease, but should not be ranked among the symptoms indicating only a disposition to it. All the other symptoms illustrative of the same point, which have been adduced, are either dubious or uncertain; as fair and shining skin; light hair and eyes; females being more subject to it than males, or males than females; both of these contradictory positions having their respective advocates," (page 3.)

I have many cases annually under my care illustrative of these statements, and proved not only by the previous history, but by the effects of proper remedies. For, as the functions of the stomach and bowels become more impaired, the inflamed and tumid appearance of the eyes, nose, or lip, become more and more evident, until, perhaps, ulceration takes place. But as the condition of these functions is improved, the above described state of parts disappears.

All parts of the body are liable to be affected by scrofulous degeneration; thus it is seen in the brain, lungs, heart, liver, spleen, kidneys, muscles, and bones, and also in serous and mucous membranes.

I cannot do better than extract the following description of scrofula, when left to itself, from Dr. Cullen's "First Lines on the Practice of Physic," (par. 1743, et seq.) "Frequently the first appearance of the disease is the tumid and chapped lip above mentioned. Upon these occasions, the first appearance is that of small spherical or oval tumours, moveable under the skin. They are soft, but with some elasticity. They are without pain, and without

any change in the color of the skin. In this state they often continue for a time even for a year or two, and sometimes longer. Most commonly they first appear upon the sides of the neck below the ears; but sometimes also under the chin. In either case, they are supposed to affect in these places the conglobate or lymphatic glands only; and not at all the salivary glands, till the disease is very greatly advanced. The disease frequently affects, and even at first appears in, other parts of the body. In particular, it affects the joints of the elbows and ancles, or those of the fingers and toes. The appearances above the joints are not commonly, or elsewhere, small moveable swellings; but a tumour almost uniformly surrounding the joint, and interrupting its motion.

“These tumours, as I have said, remain for some time little changed; and from the time they first appeared in the spring, they often continue in this way till the return of the same season in the next, or perhaps the second year after. About that time, however, or perhaps in the course of the season in which they first appear, the tumour becomes larger and more fixed; the skin upon it acquires a purple, seldom a clear redness; but growing redder by degrees, the tumour becomes softer, and allows the fluctuation of a liquid within to be perceived. All this process, however, takes place with very little pain attending it. At length some part of the skin becomes paler; and by one or more small apertures a liquid is poured out.

“The matter poured out has at first the appearance of pus, but it is usually of a thinner kind than that from phlegmonic abscesses; and the matter as it continues to be discharged, becomes daily less purulent, and appears more and more a viscid serum, intermixed with small pieces of a white substance resembling the curd of milk. By degrees the tumour almost entirely subsides, while the ulcer opens more, and spreads broader; unequally, however, in different directions, and therefore is without any regular circumscription. The edges of the ulcer are commonly flat and smooth, both on their outside, and their inner edge, which seldom puts on a callous appearance. The ulcers, however, do not generally spread much, or become deeper; but at the same time their edges do not advance, nor put on any appearance of forming a cicatrix.

“In this condition the ulcers often continue for a long time, while new tumours, with ulcers succeeding them in the manner above described, make their appearance in different parts of the body. Of the first ulcers, however, some heal up, while other tumours and ulcers appear in their vicinity, or in other parts of the body; and in this manner the disease proceeds, some of the ulcers healing up, at least to a certain degree, in the course of summer, and breaking out again in the succeeding spring; or it continues, by new tumours and ulcers succeeding them, in the spring season, making their appearance successively for several years.

“In this way the disease goes on for several years; but very commonly in four or five years it is spontaneously cured, the former ulcers being healed up, and no new tumours appearing; and thus, at length, the disease ceases entirely, leaving only some indelible eschars, pale and smooth, but in some



parts shrivelled; or where it had occupied the joints, leaving the motion of these impaired, or entirely destroyed.

“Such is the most favourable course of this disease, and with us it is more frequently such than otherwise,—but it is often a more violent, and sometimes a fatal malady. In these cases, more parts of the body are at the same time affected, the ulcers also seeming to be imbued with a peculiarly sharp acrimony, and therefore becoming more deep, eroding, spreading, as well as seldom healing up. In such cases, the eyes are often particularly affected. The edges of the eye-lids are affected with tumour and superficial ulcerations; and these commonly excite obstinate inflammation in the adnata, which frequently produces an opacity in the cornea.

“When the scrofula especially affects the joints, it sometimes produces there considerable tumours; in the abscesses following which, the ligaments and cartilages are eroded, and the adjoining bones are affected with a caries of a peculiar kind. In those cases, also, of more violent scrofula, while every year produces a number of new tumours and ulcers, their acrimony seems at length to taint the whole fluids of the body, occasioning various disorders, and particularly a hectic fever, with all its symptoms, which at length proves fatal, with sometimes the symptoms of a phthisis pulmonalis.

“The bodies of persons who have died of this disease, show many of the viscera in a very morbid state, and particularly most of the glands of the mesentery very much tumefied, and frequently in an ulcerated state. Commonly, also, a great number of tubercles or cysts, containing matter of various kinds, appear in the lungs.

“Such (says Cullen, par. 1750,) is the history of the disease; and from thence it may appear that the nature of it is not easily to be ascertained.”

*Treatment of scrofula.*—In describing the treatment of scrofula, I shall confine myself to that which is necessary in glandular affections and superficial ulcerations, as the diseases of the eye and the lungs have been already considered, and as those of the bones belong more to the province of surgery. Nevertheless, the constitutional treatment that I shall recommend, is equally applicable to all forms in which the disease occurs. We are told by almost every author “to correct the bad habit of body,” and improve the state of the constitution; but, as far as I am aware, we have never yet been told a proper method to bring about this desirable event, or, indeed, in what the bad habit of body consists. Mr. Lloyd appears to me to have arrived nearer the truth in this respect than any other writer, but how much his information has been drawn from Mr. Abernethy, it is not for me to say.

“From repeated observation, however, (says Mr. Lloyd,) I am convinced that there is always a disordered state of health, antecedent to those changes in the structure of parts, which are called scrofulous diseases, whether they are the effect of an acquired, or of an hereditary tendency; and, therefore, that our treatment must be always founded on the same principles, so, of course, it must be modified according to any particular circumstances which



may attend particular causes.”—(Page 26.) In other places of his work, he attributes this condition to more or less disorder of the digestive organs, which, he says, will always be found to have existed for some time previous to the appearance of the disease in any particular part. This will be distinctly observed in the following paragraph, (at page 33.)—“From the nature of the constitutional disorder that attends and precedes this disease, we might be induced to believe that the disease entirely depended upon the disorder of the digestive organs, produced by various causes acting immediately on them, or mediately through the nervous system.” Nevertheless Mr. Lloyd has failed to show what the true nature of the disorder is, or its precise seat, or, I may add, a more successful mode of treatment than his predecessors.

Dr. Cullen states, in paragraph 1753, that “for the cure of scrofula, we have not yet learned any practice that is certainly or even generally successful. The remedy which seems to be the most successful, and which our practitioners specially trust to and employ, is the use of mineral waters; and, indeed, the washing out, by means of these, the lymphatic system, would seem to be a measure promising success.”

A great number of specifics have been recommended for the cure of the scrofula, the chief of which are bark, mercury, steel, mineral waters, barytes, lime-water, and muriate of lime; but experience has shown, that they are not worthy of much confidence, and some of them are represented to have been injurious. I was once very much amazed on hearing the answer given by a physician in my presence to a lady, who was desirous of knowing how long her little girl was to be compelled to take the solution of the muriate of lime. She stated that it was a very nauseous medicine, and that it had done the child no good, although she had taken it regularly for six months. The physician replied, that it would probably require three or four years before it would produce any beneficial effects, and that it must be regularly taken. Whether the physician spoke believing what he said to be true, I cannot pretend to say, but he looked grave enough.

Judging from the condition of the tongue, from the appetite, the increased thirst, the tumefaction of the abdomen, the degree of flatulency, the occasional pain in the belly, the irregularity of the bowels, and the appearance of the feculent matter, I persuaded myself many years ago, that scrofulous affections were produced by disease in the digestive organs, and that that disease, whatever else it might be owing to, consisted principally in extensive irritation and inflammation of the mucous membrane. But I had little notion that frequently there were extensive ulcerations, till I was repeatedly convinced by dissection that this was the case, since which time I have treated the disease in the following manner, and with much success.

If along with considerable gastro-intestinal irritation there be much fever at night, the strength being as yet unbroken, leeches ought to be applied to the abdomen, in such number as the symptoms, strength, and state of the

constitution require; the bowels should be kept gently open, but drastic purgatives are on no account to be exhibited. Counter-irritation should be produced on the abdomen, by means of stimulating embrocations, or by what is still better, tartar-emetic ointment; and if an opiate be required to allay the irritation of the bowels, perhaps the best remedy will be a few grains of Dover's powder. It is probable in such circumstances that lime-water has been found beneficial, as it is a remedy of considerable power in this particular state of the mucous membrane. The diet must be rigidly attended to, and varied according to circumstances. When the tongue is loaded, and red round the edges, or universally red, the patient should be restricted to gruel, arrow-root, whey, and the like, as the digestive powers will not be able to assimilate any other kind of food. Soups, and animal jellies, which are so often had recourse to, prove very injurious, and aggravate the evils which it is our object to prevent. But when the marks of irritation in the stomach and bowels subside, when the tongue becomes clean, and the stomach more vigorous, a small quantity of chicken, or any other kind of meat, should be allowed, care being always taken that the patient swallows no more than the stomach can easily manage. If he do, the mischief will be soon announced by acidity, heart-burn, troublesome distension of the stomach, and a feverish night. For some days after such an occurrence, the articles of diet mentioned above should be used.

Calomel, or blue-pill, is to be administered only when the tongue is furred, although there can be no objection either to an occasional grain or two of calomel, or of blue-pill, to act as a gentle laxative.

The great error of the system pursued by Mr. Abernethy and his disciples, arises from their giving the blue-pill indiscriminately, owing, perhaps, to their not being aware that the mucous membrane is the seat of the irritation, and that inflammation and ulceration sometimes take place.

The warm bath is to be used every second night, and on the alternate days the body may be sponged with warm water and vinegar, which last is the best remedy when the patient is either very weak, or when the health and strength are becoming restored. By and by, sponging with cold water, the shower-bath, or sea-bathing, may be substituted.

Air and exercise are most indispensable parts of the treatment, but the patient should not be exposed to a raw, cold, damp atmosphere, at least till recovery is far advanced, and not even then, unless the body be sufficiently protected by warm clothing. Flannel should be worn next the skin, and during the winter and spring months, a leather jacket and drawers should be used in addition to, but outside of the flannel.

There can be no reasonable objection against the occasional employment of mineral acids and tonics, provided they be not persisted in too long, or exclusively trusted to as specifics, or used at times when leeching and counter-irritation are actually necessary.

I cannot avoid doing Mr. Lloyd the justice of transferring the following

judicious passage from his work to these pages :—" When there is what is called a weak stomach, with loss of appetite, I have often seen the different tonics, as cinchona, steel, and the mineral acids, of the greatest service; but I am sure, as I have said before, that they possess no specific power over scrofula. Moreover, I feel certain, that a great deal of mischief is often produced by the exhibition of these medicines, in conjunction with a stimulating diet, and that diseases which might otherwise be speedily relieved, are by these means rendered fatal to the patients. Too often have I seen medical men, when consulted about children with swelling of the glands of the neck, or other scrofulous affection, at once declaring them in a delicate state of health, prescribe a generous diet, as full meals of meat, with porter and wine, with the use of bark, steel, or some other strengthening medicines as they are called, merely because the disease was scrofula. Too often have I seen this plan pursued in cases where, on more accurate examination, I have found the patient requiring a plan of treatment directly the reverse."—(Page 41.) And in another place, alluding to the same treatment, he says, " It is true, however, that when children are first put on this treatment, they appear to the common observer immediately to improve in health. A species of fever is produced, the cheeks become fuller and flushed, and the exhilarating powers of the stimuli heighten the spirits of the child, so that the delighted mother feels greater confidence in her doctor, and expects soon to see her child perfectly recovered. But too soon, however, these favorable appearances are generally proved to be fallacious, by the discovery of some fresh swelling, or by the child evidently becoming weaker and more irritable. It is equally true, too, that when children are put on a different plan of treatment, they often, for the first ten days or a fortnight, become paler, and perhaps weaker; but after this period, if there be no important visceral disease, it will always be found that, the irritation of the disease subsiding, they gradually recover strength and flesh, though perhaps taking only half the food which they were accustomed to before."—(Page 42.)

These passages merit the greatest attention from those practitioners who still follow the line of treatment which Mr. Lloyd condemns; and for further particulars, I beg to refer the reader to the chapter on *tabes mesenterica*, in the first part of this work.

It is now necessary that I should notice a remedy which has been found of great service in reducing enlarged glands, provided their structure be not destroyed by diseased action. This remedy is iodine, and its various preparations, the effects of which are very wonderful in bronchocele, although its administration in scrofulous affections of the glands, has not been attended with the universal success which was at one time anticipated. Nevertheless, it is a preparation which is in many instances highly serviceable, but which requires judgment and discrimination. Iodine is of no service if there be much gastro-intestinal irritation, or a loaded tongue, or if the gland be in a state of inflammation. Hence it is that it has been found so beneficial in chronic in-



dolent swellings, as in bronchocele, and that its operation has been observed in many cases to be more rapid when its use is conjoined with local bleeding. Preparations of iodine are to be used in the manner already described when treating of diseases of the uterus.

*Local treatment of scrofulous affections of the glands.*—It is to be apprehended that serious injury has been inflicted on individuals, by the absurd plan of trying to “put back” glandular tumours, by cold applications of various kinds. When the tumours are small, and not painful, little need be done except covering the parts with flannel, or rubbing them with an ointment containing iodine. But should there be any inflammation, warm fomentations, or poultices, ought to be applied, and an opening made as soon as fluctuation is discovered. Dr. James Hamilton, jun., the Professor of Midwifery in this University, has great merit for being among the first, who insisted upon the advantage of making an early opening; and he used to take particular pains to shew, that so far from leaving a mark, an early puncture was the best means for preventing such a disagreeable circumstance. By making the incision, we shall prevent the formation of those small apertures which so frequently run into extensive ulcerations; and we always find, that the longer the part is inflamed, and the more distended it becomes, the subsequent ulcerations are more extensive, indolent, and difficult to heal. When the gland is deep-seated, there is a greater necessity for letting out the matter. But should the glandular swelling be very much inflamed and tender from the first, or become so at any time before matter is formed, leeches are to be applied to moderate the violence of the inflammation, and prevent the abscess from becoming so large as it would undoubtedly do if left to run its course.

In the event of our not being called till ulceration has taken place, besides attending to the constitutional treatment already so fully described, we must have recourse to the application of various remedies. Some cases of indolent ulcer assume a healing tendency under the application of the black-wash, or a solution of the acetates of lead or zinc, but it should be applied warm, and not persisted in for more than two or three days. In other cases, whether the sores are either indolent or irritable, lunar caustic will be found to have the best effects; and the reason why it has failed so often is, that proper constitutional remedies have not been employed at the same time. In some cases, immediate benefit will be derived from the application of an ointment of the acetate of copper, in the proportion of two, four, or six grains of the acetate to a dram of simple cerate. From experience, I can speak highly of the effects of pressure. In a case of deep and extensive scrofulous ulceration of the mamma, of above fourteen years standing, the part assumed a healing tendency in a few days after the application of a graduated pressure, and was completely cicatrized in rather less than six weeks; and I could mention many other successful cases.



## CHAP. IV.

### DROPSY.

---

#### GENERAL REMARKS.

An unusual collection of serous or watery fluid in any part of the body, is called a dropsy ; and is observed to take place in the cellular tissue, and in serous cavities. Hence, we find it in the general cellular membrane, which is extended over the surface of the body,—in the lungs, where the air-cells and blood-vessels are enveloped by a loose cellular tissue,—within the membranes of the brain,—in the pericardium,—and in the cavities of the plura, and peritoneum. Dropsy has therefore received distinct appellations, according to the locality of the effusion ; and in noticing these circumstances, Dr. Cullen observes, (Par. 1645,) that “ although the particular instances of such collection are to be distinguished from each other according to the parts they occupy, as well as by other circumstances attending them ; yet all of them seem to depend upon some general causes, very much in common to the whole. Before proceeding, therefore, to consider the several species, it may be proper to endeavour to assign the general cause of dropsy.” I shall pursue the same course as Dr. Cullen, who, although he seems to have directed considerable attention towards the acquirement of an intimate knowledge of the morbid alterations found in different organs in dropsy, yet was too anxious to insist upon a loss of tone in the absorbent extremities of the lymphatics, and laxity of the exhalent vessels, as causes, to allow sufficient influence to internal organic disease, or to a general plethora or inflammatory diathesis.

“ In persons in health (says Dr. Cullen), a serous or watery fluid seems to be constantly poured out, or exhaled in the vapour, into every cavity and interstice of the human body capable of receiving it ; and the same fluid, without remaining long, or being accumulated in these spaces, seems constantly to be soon again absorbed from thence by vessels adapted to the purpose. From this view of the animal economy, it will be obvious, that if the quantity poured out into any space happens to be greater than the absorbents can at the same time take up, an unusual accumulation of serous

fluid will be made in such parts; or though the quantity poured out be not more than usual, yet if the absorption be any ways interrupted or diminished, from this cause also an unusual collection of fluid may be occasioned.

"Thus in general, dropsy may be imputed to an increased effusion, or to a diminished absorption." (Par. 1645.)

He considered that increased effusion may happen either from a preternatural increase of the ordinary exhalation, or from the ruptured vessels carrying, or of sacs containing, serous or watery fluids. The ordinary exhalation may be increased from an interruption which resists the free passage of the blood from the arteries into the veins, which interruption increases the force of the arterial fluids in the exhalents, from which the effusions take place. This interruption may be owing to the following circumstances: disease of the heart, particularly certain conditions "in the right ventricle of the heart itself," which prevents it from receiving the usual quantity of blood from the veins—to obstruction in the vessels of the lungs, preventing the entire evacuation of the right ventricle, and thereby hindering its receiving the usual quantity of blood; "thus (says he) a polypus in the right ventricle of the heart, and the ossification of its valves, as well as all considerable and permanent obstructions in the lungs, may be considered as causes of dropsy." (Par. 1649.)

The only additions which can be made to these last observations, are, that it is now well known, every kind of organic disease of the heart, and of its valves, may give rise to dropsical effusions, if the patient be not cut off early in the complaint; and there can be no doubt also, that all considerable and permanent obstructions to the circulation in the lungs will occasionally give rise to dropsy; but in a practical point of view, it is important to know that chronic bronchitis is the diseased condition of those organs on which it most frequently depends. But in either of these cases, there is something more to account for the dropsical effusion, than the mere obstruction of the circulation,—the functions of the lungs are embarrassed, and the blood itself does not undergo those changes which are necessary to constitute health.

Dr. Cullen supposed that "it may serve as an illustration of the operation of these general causes to remark, that the return of the venous blood is in some measure resisted when the posture of the body is such as gives occasion to the gravity of the blood to oppose the motion of it in the veins, which takes effect when the force of the circulation is weak; and from whence it is that an upright posture of the body produces or increases serous swellings in the lower extremities." (Par. 1650.) It appears more probable, however, that the collection of serum in the lower extremities is rather to be attributed to the fluid gravitating from superior parts to those most depending, than to an increased effusion from the vessels arising from the posture of the body, and the weakness of the circulation.

"Not only (continues Dr. Cullen) those causes interrupting the motion of the venous blood more generally, but farther, the interruption of it in particu-

lar veins, may likewise have the effect of increasing exhalation, and producing dropsy. The most remarkable instance of this is, when considerable obstructions of the liver prevent the blood from flowing freely into it from the vena portarum and its numerous branches, and hence these obstructions are a frequent cause of dropsy. (Par. 1651.)

“Scirrhosities of the spleen and other viscera, as well as the scirrhus of the liver, have been considered as causes of dropsy; but the manner in which they can produce the disease, I do not perceive, except it may be when they happen to be near some considerable vein, by the compression of which they may occasion some degree of ascites; or, by compressing the vena cava, may produce an anasarca of the lower extremities.”

Dr. Cullen also thought, that even in smaller vessels, the interruption to the motion of the blood, in particular veins, has a similar effect: “Thus a polypos formed in the cavity of a vein, or tumours formed in its coats, preventing the free passage of the blood through it, have had the effect of producing dropsy in parts towards the extremity of such veins.” (Par. 1653.)

“But the cause most frequently interrupting the motion of blood through the veins, is the compression of tumours existing near to them: such as aneurisms in the arteries, abscesses, and scirrhus or steatomatous tumours in the adjoining parts. To this head may be referred, the compression of the descending (*ascending*) cava by the bulk of the uterus in pregnant women, and the compression of the same by the bulk of water in the ascites; both of which compressions frequently produce serous swellings in the lower extremities.” (Par. 1654.)

The statements contained in the above paragraphs appear to me to be far too mechanical. When an obstruction takes place in the liver, it proceeds either from abscess, tubercular formation, or scirrhus degeneration; consequently, the functions of the organ must be embarrassed to a greater or less extent; the mesenteric blood which passess through it, cannot undergo the necessary changes, and must therefore operate prejudicially on the system at large. Besides, if dropsy were owing to the mere mechanical obstruction, preventing the blood from flowing freely through the vena potarum, ascites only should be the consequence, and not general dropsy. With respect to Dr. Cullen’s observations concerning the compression produced by the gravid uterus, and that occasioned by the bulk of water in ascites, as being the frequent causes of œdema in the lower extremities, it may be further remarked, that in many cases, the embarrassed functions of the kidneys will be found to be the cause of the effusion; and that by increasing the flow of urine in the former, the swelling in the extremities will permanently disappear, although the uterus goes on for months increasing in bulk as well as in weight. In some of the most exquisite examples of dropsical effusion, confined to the cavity of the abdomen, which have fallen under my observation, no œdema of the extremities took place. I have often made a similar remark, in cases



of enlarged ovaria, and other uterine tumours, in many of which the pressure must have been more considerable than either during gravidity or ascites.

Dr. Cullen seems to have forgotten, that, in the case of mere obstruction in any one particular vein, unless it be the trunk leading from an extremity, the blood which ought to pass through it will find its way by some other route. The crural and the iliac veins have been found not only obstructed, but diseased, in cases of *phlegmatia dolens*, in which, instead of œdema of the limb, a general inflammatory affection is produced in it; and although the nature of the disease has not yet been fully investigated, all the phenomena in the limb are different from those accompanying œdema.

“It may be supposed (says Dr. Cullen, par. 1655,) that a general preternatural plethora of the venous system may have the effect of increasing exhalation; and that this plethora may happen from suppression of fluxes, or evacuations of blood, which had for some time taken place in the body, such as the the menstrual and hæmorrhoidal fluxes. A dropsy, however, from such a cause, has been at least a rare occurrence, and when it seems to have happened, I should suppose it owing to the same causes as the suppression itself rather than to the plethora produced by it.

“One of the most frequent causes of an increased exhalation, I apprehend to be the laxity of the exhalent vessels. That such a cause may operate, appears probable from this, that paralytic limbs, in which such a laxity is to be suspected, are frequently affected with serous, or as they are called, œdematous swellings.

“But a much more remarkable and frequent example of its operation occurs in the case of a general debility of the system, which is so often attended with dropsy. That a general debility does induce dropsy, appears sufficiently from its being so commonly the consequence of powerfully debilitating causes, such as fevers, either of the continued or intermittent kind, which have lasted long; long-continued, and somewhat excessive evacuations of any kind; and, in short, almost all diseases that have been of long continuance, and have at the same time induced the other symptoms of a general debility.

“Among other causes inducing a general debility of the system, and thereby dropsy, there is one to be mentioned as frequently occurring, and that is, intemperance in the use of intoxicating liquors; from whence it is that drunkards of all kinds, and especially dram-drinkers, are affected with this disease.

“That a general debility may produce a laxity of the exhalents, will be readily allowed: and that by this especially it occasions dropsy, I judge from hence, that while most of the causes already mentioned are suited to produce dropsies of particular parts only, the state of general debility gives rise to an increased exhalation into every cavity and interstice of the body, and therefore brings on a general disease.”

It appears to me, that the illustrations which Dr. Cullen has used in proof of the laxity of the exhalent vessels, which he considers the chief circumstance in the pathology of dropsy, and therefore terms the *hydropic diathesis*,



are most unfortunate. If they were correct, we should invariably see paralytic limbs œdematous, which is far from being the case. With respect to fevers, whether continued or intermittent, which have lasted long, we may certainly expect occasionally to see dropsical affections, not so much from debility, however, as from changes in the structure of internal organs: and lastly, as to intemperance, and especially dram-drinking, these habits no doubt produce general debility, and likewise dropsy, in consequence of the diseased conditions of the stomach, liver, or kidneys, which they occasion.

Dr. Cullen also considers that dropsy may be produced by a preternatural abundance of serum in the blood-vessels, which may be sometimes owing to drinking a large quantity of very cold water, or to absorption from a moist atmosphere, or to a fault in the digestive and assimilating powers in the stomach and other organs. Besides these, he mentions other causes which are more likely to produce inflammation than dropsy,—as the rupture of the thoracic duct, and a consequent effusion of chyle and lymph into the thorax; and a rupture, or erosion of the kidneys, ureters, and bladder of urine,—“whereby the urine has been poured into the cavity of the abdomen, and produced an ascites.” (Par. 1661.)

From these theories I turn with pleasure to the pathological work of Dr. Blackall, and the still more useful and splendid production of Dr. Richard Bright of London.

Dr. Blackall seems to have been the first author who drew the attention of the profession in a particular manner to the coagulable state of the urine, and to the prevalence of an inflammatory diathesis in some kinds of dropsy. He proved by dissection, that the pleura, the peritoneum, and pericardium, are often unequivocally inflamed, covered with false membrane, and adhering to adjacent parts;—that the liver and kidneys are frequently enlarged, and otherwise diseased;—that the lungs sometimes show marks of inflammation; that the lymphatic vessels themselves are found unusually thickened and distended in dropsical bodies, so much so, that he alledges such subjects are much preferred for anatomical preparations; and, lastly, that the cellular membrane in dropsical parts, frequently presents an unusual resistance to the knife, and that the cells contain an effusion somewhat transparent and coagulated.

Dr. Blackall thinks that the inflammatory nature of dropsy, is so far made out by the following facts:

“1. The serum of the affected cavities has been often found opaque in various degrees, discoloured, and containing pieces of lymph; and in one instance, even the fluid of the cellular membrane coagulated spontaneously.

“In addition to these appearances of the dropsical fluid, which argue a secretion often different from that of mere relaxation, the membranes likewise are sometimes greatly inflamed and disfigured.

“3. Many of the remedies are antiphlogistic; and there is a certain stage in almost every case of the disease, in which tonics do material injury.

“4. The frequent buffiness of the blood, and that too sometimes of a pe-

eular kind, is not to be overlooked in this investigation; and it is worthy of much notice, that whilst the blood and the secreted serum are accused of being too watery, the urine, which commonly contains little or no albumen, is loaded with it in a great and unnatural proportion. This phenomenon could hardly be expected, as the result of too thin a condition of the fluids, and a deficiency of coagulable matter; on the contrary, it is a very strong proof, if not of its excess, at least of some newly-acquired properties with regard to separation, and of an altered texture. I add, as a fact on which we cannot too often reflect, that where the urine is most loaded, coagulates by the lowest heat, and most firmly, the blood is likewise most buffy, and the whole system bears the greatest marks of inflammation."

That part of Dr. Bright's work relating to dropsy, is divided into three parts. In the first, he gives twenty-four cases of dropsy illustrative of the coagulability of the urine, with a number of very interesting dissections in which a peculiar diseased condition of the kidneys was discovered. In the second, eleven cases illustrative of the disease of the liver connected with dropsical effusion are noticed. And in the third, four cases illustrative of some of the appearances observable where the disease is connected with the viscera of the thorax.

In the first part, Dr. Bright, besides mentioning the great and tangible causes of dropsy—as diseases of the heart, lungs and liver; the pressure of tumours; the obliteration of veins; and certain inflammatory appearances of the pleura and peritoneum—makes the following observations respecting the alteration of structure in the kidneys, and its connection with albuminous urine: "There are other appearances to which I think too little attention has hitherto been paid. They are those evidences of organic change which occasionally present themselves in the structure of the kidney; and which, whether they are to be considered as the cause of the dropsical effusion, or as the consequence of other disease, cannot be unimportant. Where those conditions of the kidney to which I allude have occurred, I have often found the dropsy connected with the secretion of albuminous urine, more or less coagulable on the application of heat. I have in general found that the liver has not in these cases betrayed any considerable marks of disease, either during life, or on the examination after death, though occasionally incipient disorganization of a peculiar kind has been traced in that organ. On the other hand, I have found, that when the dropsy has depended on organic change in the liver, even in the most aggravated state of such change, no diseased structure has generally been discovered in the kidneys, and the urine has not coagulated by heat. I have never yet examined the body of a patient dying with dropsy, attended with coagulable urine, in whom some obvious derangement was not discovered in the kidneys. Whether the morbid structure by which my attention was first directed to this subject, is to be considered as having in its incipient state given rise to an alteration in the

secreting power, or whether the organic change be the consequence of a long continued morbid action, may admit of doubt; the more probable solution appears to be that the altered action of the kidney is the result of the various hurtful cases influencing it through the medium of the stomach and the skin, thus deranging the healthy balance of the circulation, or producing a decidedly inflammatory state of the kidney itself;—that when this continues long, the structure of the kidney becomes permanently changed either in accordance with, and in furtherance of that morbid action; or by a deposit, which is the consequence of the morbid action, but has no share in that arrangement of the vessels on which the morbid action depend.

“The observations which I made respecting the condition of the urine in dropsy, are in a great degree in accordance with what has been laid down by Dr. Blackall in his most valuable treatise.

“Where anasarca has come on from exposure to cold, or from some accidental excess, I have in general found the urine to be coagulable by heat. The coagulation is in different degrees; it likewise differs somewhat in its character; most commonly when the urine has been exposed to the heat of a candle in a spoon, before it rises quite to the boiling point it becomes clouded, sometimes simply opalescent, at other times almost milky, beginning at the edges of the spoon, and quickly meeting in the middle. In a short time the coagulating particles break up into a flocculent or a curdled form, and the quantity of this flocculent matter varies from a quantity scarcely perceptible floating in the fluid, to so much as converts the whole into the appearance of curdled milk. Sometimes it rises to the surface in the form of a fine scum, which still remains after the boiled fluid has completely cooled. There is another form of coagulable urine, which in my experience has been much more rare; when the urine, on being exposed to heat, assumes a gelatinous appearance, as if a certain quantity of isinglass had been dissolved in water. I have indeed met with this in one or two cases only.

“During some part of the progress of these cases of anasarca, I have in almost all instances found a great tendency to throw off the red particles of the blood by the kidneys, betrayed by various degrees of hæmaturia from the simple dingy colour of the urine, which is easily recognized; or the slight brown deposit, to the completely bloody urine, when the whole appears to be little but blood, and when not unfrequently a thick ropy deposit is found at the bottom of the vessel.”

And again he states: “In all the cases in which I have obtained the albuminous urine, it has appeared that the kidney has itself acted a more important part, both functionally and organically, than has generally been imagined.”

Case I.—*In the first case*, published by Dr. Bright, of anasarca, with coagulable urine, there were marks of pericarditis; the heart was large and firm; a triangular and solid deposit of bone was found in the angle between two of the aortic valves; the left lung adhered, and was in every part converted into a grey hepatized structure, very few portions admitting partially



the entrance of air; the right lung was œdematous, and surrounded but not compressed by effusion of serum; there were some marks of former inflammation on the peritoneal coat of the liver; the spleen was dark-coloured, with a slight adventitious covering like that on the liver. The KIDNEYS were completely granulated throughout; externally the surface was rough and uneven; internally all traces of the natural organization nearly gone, except in the tubular parts, which were of a lighter and more pink colour than usual. The granulated condition of the kidney was in an advanced stage of the disease.

Case II.—On dissection, the KIDNEYS were both found of unusual size, certainly half as large again as most commonly seen, but the right was the largest. On an external view they were obviously granulated, with a large proportion of yellow granular matter; on taking off the proper tunic, this was more distinctly seen; and on cutting in, the whole of the cortical structure seemed to be converted into a yellow substance in appearance like fat in many parts; though in other parts the change has not gone so far. In this case the urine was coagulable.

Case III.—In this case, which was connected also with some degree of coagulability of the urine, the KIDNEYS were found in the following condition. Externally, some what misshapen, from the tubercular character of their structure; the form did not depend upon any disease analagous to true tubercles, but upon a general change in the substance of the kidney, some parts projecting, of a white colour upon a pinkish ground, the small star-like vessels running over them. The size was but little altered; the proper tunic adhered very closely. Internally, the whole cortical structure was of a pretty uniform yellowish colour, with many small, opaque, and indistinct yellow spots.

Case IV.—The urine coagulated by heat, was of a brown colour, apparently from a mixture of the red particles of the blood; and the KIDNEYS afforded, on dissection, throughout the whole cortical structure, a curious specimen of disease, apparently the commencement of granulation; they were rather large and soft; their general colour was pale, and on taking off the tunic, the whole surface was seen speckled with minute yellowish bodies; on making a longitudinal section, the same bodies were seen pervading the whole cortical substance, assuming, near the surface, somewhat of the striated arrangement observed in the structure of the kidney at that part, and irregularly disseminated throughout the other parts.

Case V.—The urine coagulated strongly by heat; and the KIDNEYS were found large, very dark on their upper surface, on the lower, mottled with yellow; no elevated granulation to be seen externally, but many small yellow specks. Internally, the substance was remarkably pale, and had assumed the appearance of a fatty substance, with some traces of a granulated structure throughout; this, however, depended in part on a flaky opaque matter thickly disseminated, and this same appearance became very obvious over the whole external surface after the kidney had been kept in pure water for a day or two.

Case VI.—The KIDNEYS afforded very fine specimens of the confirmed granulated change. They were rather large and bulky; the granulation was seen externally over every part of the surface, even before the tunic was removed. The granular bodies were small, of a yellow colour, and the surrounding substance more pink. On cutting longitudinally through the kidney, it was seen that the whole cortical substance was composed of the same altered structure, and the striated arrangement near the surface was almost lost. Dr. Bright gives no account of the state of the urine, as he did not see the patient.

Case VII.—The urine was scanty, and coagulated very considerably on the application of heat, becoming first milky, and then loaded with a great number of flakes; and on dissection the KIDNEYS were found small, rather lobulated, of a semi-cartiliginous hardness, completely granulated; the small whitish or yellow granules projecting with red intervening spaces, so as to form a scabrous surface, both appearing and feeling rough. On making a longitudinal section, the kidney cut with the resistance of a scirrhus gland; the tubular part was drawn much nearer to the surface than is natural. the cortical part indistinctly granulated throughout, of a greyish drab, mixed with purple.



Case VIII.—The urine was of a deep yellow colour, clear, and coagulated in a very marked manner by heat, assuming a white curdled form; and on dissection the KIDNEYS were observed to be very small, and hard in consistence, feeling almost cartilaginous; their prevailing colour was purple; on their external surface they were distinctly granulated in texture; and on making a longitudinal section, the same was perceptible throughout; it was remarkable that the cortical portion was exceedingly thin, so that the distance between the termination of the tubular part and the external surface was much less than in the healthy organ.

Case IX.—The urine was scanty, and when first passed, was clear, but of a dingy brown colour; it became turbid on cooling, grew clear on the application of a gentle heat, and by raising the temperature nearly to the boiling point, it coagulated in a very marked degree, so that it put on the appearance of thick treacle-posset. On examination of the body after death, the KIDNEYS presented most decidedly the granulated structure; this was somewhat marked externally, the lighter points of the granulation being smaller than Dr. B. has often observed; and on cutting into the substance, it was seen that the natural structure was destroyed throughout the whole cortical part, which was mottled as in the two last cases; but this morbid structure appeared in its most advanced stage around the tubular parts.

Case X.—At first the urine was scanty, and coagulated decidedly, though not to the extent usually observed, and in the progress of the disease it always continued very scanty. Sometimes it was tolerably clear, but became turbid on cooling; at other times it bore the dingy colour, which usually denotes the presence of blood; almost always it retained its coagulability, but in general this was limited to a dense deposit of brownish flakes, the whole fluid not becoming milky or curdled. On dissection, the kidneys were contracted and hard, and on removing their tunic, the surface was scabrous; but the projecting roughness was a pretty uniform grey purplish colour, and the same was observable on making a section.

Case XI.—The KIDNEYS were most decidedly diseased. They did not feel so firm as natural, were almost white in external appearance, rather large and lobulated, without any signs of granulation, and only showing a few star-like vessels distributed on the surface; otherwise of nearly one even surface, and on most minute inspection no mark of structure as usually seen on the surface of the healthy kidney was discoverable. On making a complete longitudinal section, the same grey-white colour pervaded all the cortical part, with little sign of natural structure; the faint appearance which did exist, preserved those marks of lines proceeding towards the surface, which are often more evident in the healthy kidney. The tubular part was also faintly coloured. In this case Dr. Bright could not ascertain the state of urine.

Case XII.—The urine was scanty, and of a slightly dingy colour, coagulating decidedly by heat; and on dissection the kidneys were found disorganized throughout, smooth in their external texture, rather lobulated, of a pale yellow colour, with a few superficial vessels; and on being examined internally, the same grey yellow colour pervaded the whole cortical part, with some more opaque yellow spots irregularly intermixed. The tubular structure pale, and indistinct; in a word, approaching more to the condition of the kidneys mentioned in the last case, than any others.

Case XIII.—The urine coagulated, was turbid, and became dingy as from a slight admixture of blood. On dissection the KIDNEYS very pale and rather soft, discovered externally nothing but the natural structure, rather more marked than usual, but internally was plainly to be traced a motley granulation, very small and faint in its colour and markings.

Case XIV.—The urine coagulated by heat more or less during the course of the disease, had a dark brown tinge, being a mixture of the red particles, and at length became quite red, depositing a quantity of ropy mucous. On dissection the kidneys presented a very curious appearance. They were easily slipped out of their investing membrane, were large, and less firm than they often are, of the darkest chocolate colour, interspersed with a few white points, and a great number nearly black; and this, with a little tinge of red in parts, gave the appearance of a polished fine-grained porphyry or green stone. On cutting longitudinally into the kidney, this structure and these colours were found to pervade the whole cortical part; but the natural

striated appearance was not lost; and the external part of each mass of tubuli was peculiarly dark; the whole mammillary processes were also of a dark colour. On being cut through and left for some time, a very considerable quantity of blood oozed from the kidney, showing a most unusual accumulation in the organ; and indeed it seemed to be from this cause that the peculiar appearance and colour arose; the very dark spots being the effect of blood either extravasated, or in vessels greatly gorged.

The immediate cause of death in this individual seems to have been *œdema glottidis*.

Having now extracted from Dr. Bright's work the principal diseased appearances in the kidneys, I shall proceed to give short extracts from the second part, of some of the appearances of the liver and gall-bladder, connected with dropsical effusion.

"Although (says Dr. Bright,) I am strongly impressed with the belief, that many cases of dropsy have been supposed to depend on disease of the liver, when the kidneys have, in fact, been chiefly in fault; yet there is little doubt, that in many other cases the liver is the real cause of the dropsical effusion, frequently shewing most extensive disease when the kidneys are quite healthy.

"I have already remarked, when relating the cases of anasarca, connected with organic disease of the kidneys, that the liver has seldom been perfectly healthy, though the deviation from the natural structure has often been so slight, as to render it doubtful whether it should be noticed amongst the morbid appearances; and in describing this state, I have sometimes used the expression, that the liver showed a tendency to granulation. The fact is, that the liver, in these cases, has usually preserved its natural figure; the acute margin has been perfect, and the general size has not been augmented; the peritoneum has been quite transparent, and attached only in the ordinary degree to the viscus; the texture of the liver has neither been unnaturally firm, nor morbidly flaccid; but on examining the surface, it has been evident that the colour was less uniform than in perfect health; the whole was marbled, consisting of very small light spots in a darker ground; but on making a section perpendicular to the surface, though the same general variety of colour has been observed, yet in some parts of the section it has been doubtful whether the darker or the lighter part should be considered as the ground-work; in general, however, by attentive observation, it will be found, that in the centre of the lighter spots, small depressions or openings are visible, and that the darker parts appear to be the connecting medium of the lighter parts, which seem to be the acini of the glandular structure. Although, in most cases, these appearances scarcely attract attention, yet in other cases they become more obvious, either the white portions becoming larger in proportion, or the whole viscus appearing to have lost a little of its natural pliability, to have become hard, and to break down with a slightly granulated fracture. I have scarcely, in any instance, seen this derangement of the liver go farther, except in the case of STEWART, where most decided morbid change had taken place. The liver had assumed more of a lobulated form than in health, and

the acute margin had become rounded. In all these cases, the secretion of bile is tolerably natural, the gall-bladder being well supplied with bile of a sufficiently dark yellow colour. Besides this more common appearance of the liver in the class of dropsies of which I have been treating, the liver has occasionally deviated a little in its consistence from its natural state, being either too firm or too flaccid; but where this has been the case, the deviation has only been such as is constantly occurring in cases where neither effusion, nor any other marked symptom of disease, has arisen during life. From the very prominent place which the disease of the kidney has appeared to hold in these cases, I have been inclined to consider the derangement of the liver as a secondary effect, or at least a subordinate disease, though not impossibly the state of both these organs depends on the same general constitutional affection; and I have sometimes even thought that the tendency to granulation, where it existed, maintained a certain relation in its progress to the disease of the kidney.

"There are, however, hepatic derangements, unaccompanied by obvious disease of other organs, which may probably with justice be considered as laying the foundation of dropsical effusions. And of these, I shall now detail a few examples; in which it will be seen, that the morbid appearances presented by the liver, are very various, arising, as it would seem, from morbid actions, essentially differing from each other."

Case XXV.—"Liver contracted, and throughout of a morbid structure, apparently by the deposition of minute portions of a yellow matter. The surface, covered by a very fine peritoneum, quite transparent, even more thin than usual, presenting a rough granular, and therefore uneven surface, of what might be called liver-coloured red and yellowish grey. On being cut into, the same structure of a less red colour pervaded the whole. The liver was thicker and rounder than natural, and rather smaller; and on pressure broke down easily, with a brittle or crisp fracture, uneven and granular. The gall-bladder, opaque and thick, contained the usual quantity of bile. The common duct was pervious, but at its entry into the duodenum, was contracted in a nipple-like projection, with an orifice not much larger than to admit the point of a pin. On opening the gall-bladder, and letting out the deep-coloured viscid bile with which it was filled, a number of small yellow bodies, larger than millet-seeds, and soft, adhered to the villous surface of the gall-bladder, chiefly on the side where it is attached to the liver." The urine in this case did not coagulate on the application of heat.

Case XXVI.—"The liver externally tuberculous, of a light yellow colour nearly approaching to that of a lemon, with deep fissures in the surface, apparently arising from partial contraction taking place in the substance of the organ, and partly depending on the contraction of the thin adventitious membrane which covered the peritoneum. The whole liver was enlarged about one-third above its natural size; it was greatly increased in firmness and specific gravity; it felt firm and hard, cut with considerable more resistance than boiled udder, to which it might be said to bear some general resemblance; and on examination, its whole structure was composed of bright yellow granules distributed in a transparent pinkish ground, the two parts bearing about an equal proportion; and although on the surface the pinker part appeared the basis, yet in the section the yellow rather seemed to be so. The two parts did not separate, or in this respect resemble one body imbedded in another; nor was there any appearance of tubuculer structure in the substance of the organ. The gall-bladder very much contracted, containing a small quantity of dirty-looking bile." Urine not coagulable by heat.



Case XXVII.—“The substance of the liver hardened throughout, the structure nearly resembling scirrhus, with bands of thickened cellular membrane like ligamentous matter pervading every part, and in some parts forming one-third of the whole structure; although when seen externally the liver appeared tuberculous and knotty, yet when examined internally there were no tubercles. The outside was smooth though not even, and on pressure between the fingers, gave almost the resistance of cartilage. A piece of substance taken without the peritoneal and adventitious membrane, was still so hard as not to be broken down by the same pressure; there were some adhesions, old but web-like, between the liver and diaphragm. The gall-bladder was contracted, and covered by the false membrane; it contained bright yellow bile, and the ducts were pervious.” Urine not noticed.

Case XXVIII.—“The liver was drawn up under the diaphragm, to which it was fixed by a firm old adhesion; it was stiff and rigid, and being covered with the adventitious membrane, bore no resemblance to a natural liver. It was contracted in size, and throughout every part extremely hard, so as to cut with difficulty, and almost with a cartilaginous resistance. It was of a speckled yellow green, with lighter bands running through it, but these bearing a small proportion to the whole. It was compared by some to a decomposing coarse-grained sandstone, and would not break down under any ordinary pressure of the fingers. The gall-bladder of tolerable size, and moderately filled with viscid yellow bile, which, when seen in the mass, appeared of its full dark colour: indeed, I should say that it was by no means unhealthy bile. There were five gall-stones in the bladder, the size of peas, which appeared like inspissated bile.” In this case, there was evidently chronic peritonitis, and the omentum was dense and hard. The kidneys were healthy in structure. The urine did not coagulate by heat.

Case XXIX.—The liver was found to have undergone nearly the same change as that as described in Case XXVII. The kidneys were large, and in a very unhealthy condition, quite dissolved and watery in their texture, with light yellow stripes through the cortical substance. The urine was high-coloured, coagulating a little on the application of heat, so as to become for a short time turbid, and then let fly a flaky deposit, leaving the fluid clear.

Case XXX.—The liver was drawn up almost entirely within the concavity of the diaphragm, to which it was attached by several very firm-cord like organized adhesions. This organ, throughout its whole substance, was quite changed in structure, as if in progress of becoming uniformly tubercular; its whole structure changing into small round masses of the size of large peas, not much altered from its natural colour, but capable of being picked out, leaving imperfect cavities. The gall-bladder was very small, and at least twenty times its natural thickness, opaque yellow, but containing a small quantity of bile; the ducts pervious. There was besides considerable disease of the peritoneum and intestines, and the spleen was four times the natural size. The kidneys, though large, were not unhealthy. The state of the urine is not noticed.

Case XXXI.—The liver was rather contracted in size, of a yellowish drab-colour externally, the whole granulated in appearance, so as nearly to resemble a coarse-grained sandstone, of which the component granules projected slightly on the surface, and were generally about the size of small lupine seeds, varying a little in colour,—grey, brownish, and yellow. The liver was somewhat tough, and gave considerable resistance to the knife; the altered structure pervaded the whole, and the rounded bodies were formed into clusters, many of which were of a light yellow colour; and this was particularly remarkable near the acute margin. The gall-bladder was distended with watery bile. The kidneys had a few vesicles in the substance of the cortical portion; otherwise their structure and consistence were perfectly healthy; and on stripping off the tunic, they presented a smooth and yielding surface. The state of the urine is not noticed.

Two or three other cases are subjoined in Dr. Bright's work, but I shall pass them over. I hope the appearances already described, of alteration in the structure of the kidneys and liver, will be a guide to my readers in



making similar investigations; and will induce them to peruse the work of Dr. Bright, from which they will derive much pathological and practical information.

My attention has long been attracted to diseases of the liver, peritoneum, heart, and lungs, in connection with dropsy; and my portfolio contains many drawings in illustration of these appearances; but it is only within these few years, since Dr. Bright's work appeared, that it was directed to the morbid structure of the kidneys. Since the publication of the last edition of this work, several cases have fallen under my observation, in which the kidneys presented the exact appearances so beautifully delineated by Dr. Bright.— Some of these cases were dropsical, others not. These disorganizations of the kidneys are for the most part, however, connected with dropsical effusions, and are announced by scanty secretion of urine of low specific gravity, containing a large quantity of albumen, and a diminished proportion of urea.

The profession owes much to the labours of Dr. Bright, and it is deeply to be deplored that other hospital physicians, with similar advantages, have not made the same good use of their opportunities.

*General remarks on the symptoms of dropsy.*—In this place, it is my intention to give a slight sketch of the general symptoms which accompany dropsical complaints, reserving those which are peculiar to effusions in the thorax, abdomen, &c. until I come to treat of the particular forms of dropsy. The general symptoms are, a sallow complexion; dry skin; costive bowels; urine in small quantity, and of a high colour, in some cases coagulable by heat, and of low specific gravity; *muscular* emaciation; general debility; febrile symptoms, particularly towards night; want of appetite and indigestion, and sometimes nausea, vomiting, and diarrhœa. In some cases, there are cough, difficulty of breathing, particularly in the horizontal posture, and occasionally expectoration. Sometimes there are a sense of suffocation, violent palpitation, and startings during sleep. The pulse is sometimes slow, at others quick, often irregular and intermitting; the tongue is sometimes furred and moist, at others parched and red, and sometimes it is preternaturally clean and florid. Occasionally, erysipelatous inflammation takes place, or the skin cracks, allowing a watery fluid to ooze out.

The duration of dropsy is very various, and depends almost entirely upon the nature of the disease, by which the effusion is caused.

*General remarks on the treatment of dropsy.*—Among the remedies employed in dropsy, the consideration of blood-letting is the most important; because it is indispensably necessary in some cases, while its employment is doubtful in others, and would be decidedly injurious in many. In the treatment of dropsy, many insurmountable obstacles are experienced in investigating and deciding what organ or organs are affected; besides which, sudden changes take place from the occurrence of inflammatory action in other parts, so that it requires no ordinary share of pathological and practical

knowledge to act decisively, and yet cautiously. Dr. Cullen gives three general indications of cure :—

1. The removing of the remote causes of the disease.
2. The evacuation of the serous fluid already collected in the cellular texture.

3. The restoring of the tone of the system, the loss of which may be considered in many cases as the proximate cause of the disease.

The endeavour to fulfil these indications, has, I apprehend, been the cause of much embarrassment to practitioners, and increased distress to patients.— With respect to the first, practitioners will in many instances be found contending with mere shadows, and wasting much valuable time, because disease may exist after the removal of its cause, or be even incurable, and the patient may yet be enabled to live a considerable number of years with tolerable comfort, following his business, provided the attention of the practitioner be directed to certain consequences, the occurrence of which is constantly to be dreaded. According to Dr. Bright, “the two great sources of casual danger will be found in inflammatory affections, more particularly of the serous, sometimes of the mucous membranes, and in the effusion of blood or serum into the brain, and the consequent occurrence of the apoplexy. Of these secondary or casual dangers, we have illustrative examples in many of the cases which have been stated above. Out of the seventeen dissections, we have found ten or eleven betraying inflammation of the pleura, generally old, but sometimes of recent date. We have found three instances in which the patients had suffered decided attacks of inflammation in the pericardium shortly before death, and in two of these cases, we had proof of some previous affection of the same kind. In one only were the signs of inflammation in the peritoneum well marked. Five out of the seventeen had altogether escaped inflammatory affections of the serous membranes, and one of these died with inflammation of the epiglottis. With regard to the cerebral affections coming on in the progress of these diseases, we find, in the cases above related, both apoplexy and epilepsy to have occurred; and a very well-marked instance of the former was witnessed in a patient in the clinical ward in 1825.”

The second indication, “evacuating the serous fluid,” may be fulfilled in two ways. 1. By evacuating, by means of a surgical operation, the effused fluid. 2. By exciting the action of the absorbents, and producing an increased discharge from some of the excretory organs. These are no doubt great objects, if they could be attained; but we must always recollect that the dropsy is a mere symptom or consequence of functional or organic disease in some other organ, and unless that be cured, much mischief may be done, not only by wasting precious time, but by exhibiting medicines which are sometimes manifestly injurious to the patient.

Against the third indications—“restoring the tone of the system, the loss of which may be considered in many cases as the proximate cause of the

disease,"—I have to enter a strong protest, from the injurious consequences which I have seen result from attending to it in practice. It accords, however, with Dr. Cullen's notion, that the disease is owing to a general debility, producing a laxity or want of tone in the exhalents.

There is a time that we may stimulate and give tonics with advantage, when we have conquered the cause of the disease perhaps by debilitating remedies, and when the strength must be supported. It will be sufficient for me again to refer to the cases and dissections of Dr. Bright, to show the dangers which must often arise from following such treatment, except under the above restrictions. In Edinburgh I have met with several medical men in extensive practice, whose invariable method of treating dropsy, is by giving digitalis, and large quantities of strong gin-toddy, containing an English pint, and sometimes even two of the spirit, in the course of twenty-four hours; and I have reason to believe, that the same means are used elsewhere. I would implore these individuals to peruse with care the works of Drs. Blackall and Bright, who have given us additional guides in the treatment of dropsy, by showing the inflammatory diathesis which generally prevails, and by directing our attention to the coagulability of the urine, as indicating an affection of the kidneys, which affection almost always terminates in inflammatory action, to the destruction of the organ.

It is believed by many, and it certainly appears probable, that bleeding and the antiphlogistic regimen, within certain limits, act upon the absorbent system, by creating greater activity. Blood-letting, therefore, as already observed, stands the foremost remedy; but in using it, we must be guided by the age, strength, habits, and peculiarity of constitution of the individual,—the duration of the disease,—and also by the state of the pulse. Should the condition of the pulse and other circumstances contra-indicate venæsection, local bleedings may be had recourse to, either by means of cupping-glasses or leeches, and are peculiarly serviceable when applied to the loins in cases of diseased liver and kidneys. The propriety of repeating the abstraction of blood, may be discovered from the state of the blood itself, the strength of the pulse, and the relief afforded. The rash conduct of some practitioners in taking away large quantities of blood in all cases, is to be deprecated, because, although it may be successful in some instances of dropsy, it will be found to be very injurious and even fatal in a majority; and it is greatly to be feared that the indiscriminate employment of general bleeding in this disease has too frequently led to the adoption of the opposite mode of practice already noticed.

I have seen several cases where chronic bronchitis existed with dropsy, whether as cause or effect I could not in some instances discover; but in all, great and permanent advantage was obtained from venæsection.

Purgatives stand next in importance to blood-letting. In all cases, it is necessary to keep the bowels open; and, in many, we are obliged to depend upon the use of free purgation, when the constitution is not sufficiently

strong to stand the effects of venæsection; consequently, we find that powerful doses of jalap, gamboge, scammony, and elaterium, have been highly recommended by different authors. I have heard many practitioners declare that they have *never failed* in curing dropsy by elaterium; but individuals who made such assertions, must either have been singularly fortunate in meeting with slight cases only, not produced or accompanied by organic disease, or they must have been short-sighted or forgetful. In using this class of remedies, practitioners should recollect, that violent and long continued purging is fully as debilitating as venæsection; and, in point of fact, I have seen several individuals die under the action of purgatives, to all appearance from syncope.

In the case of Evans, who recovered, Dr. Bright gave first half a grain of the extract of elaterium every six hours, and afterwards one grain twice a day, and with considerable benefit; but he was subsequently bled, and took several doses of opium. Dr. Bright seems to prefer, however, the saline laxatives, which unite a certain degree of diuretic power, and amongst these, he found the super-tartrate of potash the most efficacious; indeed, it will be seen, on perusing the cases, that in several he trusted almost entirely to this remedy.

Diuretics have been long used in *all* cases of dropsical effusion, apparently with the simple intention of "pumping the water out of the system;" but I am convinced, that the active and indiscriminate use of these, as well as of drastic purgatives, will become less general as our pathological information increases. It appears to me that little benefit will be derived in many cases from the use of diuretics, even should the effused fluid be absorbed, if the original disease, whether it be of the heart and large blood-vessels, the liver or the kidneys, remains; and, indeed, in several lingering instances, which I have treated by these means, so far successfully as to get rid of the dropsical effusion; the disease afterwards became more urgent and active.

The principal diuretics employed are squills; foxglove; acetate of potash; super-tartrate of potash; infusion of fresh broom; cantharides; oil of turpentine; and balsam of copaiva. Of these, the squills and balsam of copaiva I believe to be the best; Dr. Bright prefers the former, which he finds to act best in combination with hyosciamus, or when a grain of opium has been at the same time taken once or twice a-day; indeed, he says that he considers these two substances to form an important part of the treatment, by diminishing the irritation of the kidneys, as well as by allaying the general disturbance.

The propriety of tapping is very questionable, unless we are convinced there is no incurable organic disease; but I shall return to the consideration of this point, when treating of hydrothorax and ascites.

Scarifications are frequently practised in anasarca, and occasionally with advantage; but I believe it will in general be only temporary; and in many constitutions, inflammation, ulceration of a bad character, and even mortification, sometimes ensue.



Emetics were formerly in great repute in the treatment of dropsies, owing to the high encomiums passed upon them by the illustrious Sydenham, who says that antimonial emetics do not seem merely to evacuate the stomach, but open some passages from the cavity of the abdomen into the intestinal canal. Whatever may be the cause I cannot tell, but they seem now to be very much laid aside; there can be no doubt, however, that emetics, either of antimony or copper, do promote absorption in a wonderful manner, in induration of the testicle; and although these good effects have been much overrated by Sydenham, still perhaps they have been abandoned by practitioners of the present day without sufficient examination.

Mercury has been often used in dropsy; and there can be no doubt that it has been frequently serviceable. It would be a matter, however, of the first practical importance, if we could determine precisely the cases in which it is to prove beneficial, in order to prevent much valuable time from being lost. We now, by means of auscultation and percussion, possess advantages which those who lived before us did not enjoy, and almost any ear will be able to detect disease of the heart or chronic bronchitis—very frequent causes of dropsy,—in which the action of mercury will certainly not be so serviceable as if the liver were diseased. Dr. Bright has shown that dropsies frequently depend upon disease of the kidney, in many cases of which mercury may prove decidedly injurious, unless preceded or accompanied by general or local bleeding. In many instances, it will be found serviceable after bleeding, to prescribe a combination of calomel, squills, and digitalis, in the form of pill, to be repeated in proper doses three or four times a-day. But Dr. Bright assures us, that the cases which have proved most successful in his own practice, have generally been those in which the use of mercury has been rigidly abstained from; and he further states, that in some cases he has seen the good effects of other remedies entirely interrupted by the mercurial action; and he has likewise seen several instances, in which the cure, when mercurials have formed part of the plan, has been protracted to a great length. (Page 73.)

Poultices made of the *male fern* applied to the abdomen, have been used in several cases of dropsy by Dr. Shortt, in the Infirmary of Edinburgh, with a view of promoting an increased flow of urine, and, it is stated, with remarkably good effects. I have tried this remedy in two cases, but without success, although every care was taken to procure the plant fresh.

Blisters, and counter-irritation produced by other means, have been occasionally found of great service in dropsies, produced by whatever cause. They merely act by translating inflammatory action from an internal organ to the skin, and not, as was formerly imagined, even by Dr. Blackall, by evacuating the dropsical fluid. I have often seen the best effects from their judicious employment, and they appear to be more particularly useful when applied to the loins after topical bleeding in cases of diseased kidney. Formerly when used for the purpose of drawing off the dropsical fluid, they were applied to the extremities, and frequently caused sloughing ulcers.

Great difference of opinion exists as to the quantity of fluid which ought to be allowed to a patient labouring under dropsy; some allow as much drink as the patient feels inclined to take—others none at all; but I believe that a medium plan is the best to follow. If a patient be thirsty, and is interdicted from taking a drink, additional suffering, and many a sleepless night, is the consequence; whereas, if he be encouraged to drink, he may subsequently experience great uneasiness from the over-distended state of the stomach. In practice, we often take advantage of the thirst, to introduce a sufficient quantity of the super-tartrate of potash into the system. I believe that some who interdict liquids do so for no better reason, than because it has been stated by authors that dropsical complaints have been produced by drinking a large quantity of fluid!

I shall now proceed to notice three varieties of dropsy,—viz, anasarca; hydrothorax; ascites.

#### ANASARCA.

The term anasarca; implies a preternatural collection of serous fluid in the cellular texture, and when partial, it is often called œdema. This form of dropsy generally comes on slowly, unless it succeed to scarlet fever, when perhaps the whole body is observed to become suddenly affected; it also occurs occasionally after taking a large drink of cold fluid when the body is much heated.

In general the feet are at first observed to be affected in the evening, and to pit on pressure; the swelling gradually ascends higher, and sometimes distends the cellular tissue of the whole body. The urine is always scanty and high-coloured; the bowels are generally tardy, although now and then they are in a contrary state. The general symptoms, as well as the progress and termination of the disease, vary according to the organ affected. Sometimes there is considerable fever, and dry skin; and the heat of the parts affected is sometimes increased, although in general it is diminished.

*Treatment of anasarca.*—This must be conducted upon the principles already so fully mentioned.

#### HYDROTHORAX.

Hydrothorax may exist on both sides of the chest, or on one only, and may be complicated or not with effusion into the abdomen, and also with general œdema. In the commencement of hydrothorax, the symptoms which particularly indicate this form of the disease, are in general so slight as not to attract much attention, and may continue to be so for a considerable period, although other circumstances denoting bad health exist. The general symptoms are those which accompany all forms of dropsical affection. Those which are peculiar to hydrothorax, are now to be mentioned. At first, slight difficulty of breathing is experienced, which is increased during exercise, but more particularly when the body is placed in the horizontal posture, and is generally attended by a dry and annoying cough. The feet are observed to be swollen towards the evening; the extremities become more

and more œdematous as the disease advances, when the patient frequently complains of palpitation, increased dyspnœa, which is worse at one time than at another, sometimes producing a dread of suffocation, particularly during the night. As the disease goes on to a fatal termination, the patient can never lie down, or even recline backwards, or go to sleep in any position, without starting up suddenly with increased dyspnœa. The surface shews signs of impeded circulation; the cheeks and lips in particular become livid or deadly pale; and the pulse, if it had not hitherto been irregular and intermittent, now becomes so. At length the patient dies from suffocation and exhaustion, or becomes comatose. The progress of the disease depends much upon the organic lesion, and more particularly upon the disease affecting both cavities of the pleura, or one only; in which latter case, its progress will be much slower, the symptoms much slighter, and the patient will be able to repose in the horizontal posture, but on one side only. Corvisart has observed, that in the cases where hydrothorax exists on one side, œdema also affects the corresponding extremity.

*Stethoscopic signs.*—Before the discovery of auscultation, practitioners were always in doubt as to the existence of fluid in the chest; now, however, by applying the ear to the chest, and by percussion, *in addition* to the other symptoms, the existence of hydrothorax can be detected with the greatest certainty. In hydrothorax percussion produces a dull sound; and the respiratory murmur is either not heard, or it is very obscure, except along the vertebral column, where it is heard more distinctly. The appearance and shape of the chest also afford us additional evidence, but they cannot be depended on without having recourse to auscultation and percussion: the thorax will be observed to be more rounded than natural, and the intercostal spaces to be increased.

*Treatment of hydrothorax.*—The plan of treatment must depend upon the cause of the effusion, which may be an organic lesion of the heart or lungs, or inflammation of the pleura, and these are to be managed upon the general principles already laid down in the general remarks on dropsical effusions. In cases of threatened suffocation, or even when the dyspnœa becomes very severe, it will be proper in many cases to draw off the water; but we must be careful not to hold out the prospect of a cure from such an operation, although we may safely promise considerable temporary relief. We may nevertheless entertain some hope, if the effusion is confined to the chest, and has been produced by inflammation of the pleura, uncomplicated with disease either of the heart or lungs, and if the patient's strength be good. When treating of chronic pleurisy in the first volume of this work, a successful case of empyema is noticed, where the operation of *paracentesis thoracis* was performed by Dr. Pitcairn of Edinburgh; and there are others on record.

#### ASCITES.

\* Ascites, or dropsical effusion within the abdomen, may exist either alone, or complicated with hydrothorax and general anasarca. The symptoms, as

in other forms of dropsy, vary according to the nature of the cause. On some occasions, the disease is ushered in with well-marked symptoms, such as fever, pain in the loins or region of the liver, and corresponding disorder of all the functions of the body, announced by thirst, loss of appetite, sometimes nausea and vomiting, foul tongue, constipated state of bowels, scanty high-coloured urine, dry parched skin, &c. After these symptoms have continued for some days, the abdomen will be observed to be distended; upon percussion it will yield a dull sound, and fluctuation will be felt, unless the quantity of the effusion be small, or the intestines tympanitic.

On other occasions, the disease goes on insiduously, the enlargement of the abdomen being often for considerable time attributed to corpulency; and the other symptoms, such as restless nights, and loss of appetite, to want of exercise and debility. At length the secretion of urine becomes almost suppressed, when symptoms indicating a cerebral affection sometimes take place, and create alarm; or along with scanty urine, the legs become œdematous, and excite for the first time a correct notion as to the nature of the patient's complaints.

In all cases of ascites, the most careful examination should be made respecting the state of the thorax, as we shall be much more likely to be successful in the treatment of a case which is unconnected with any organic affection of the contents of the thorax, or with effusion into its cavities. We must have recourse therefore to auscultation and percussion, as we cannot judge with any degree of certainty from the dyspnœa or the posture of the patient. In ascites there may be great dyspnœa from hurried circulation, or from the effusion in the abdomen encroaching on the thorax, from which causes also there may be inability to lie in the horizontal posture.

In females we may have considerable difficulty in determining between ascites and the diseases of the ovaria, in which there is considerable enlargement; and when treating of diseases of the uterus, it was stated how difficult it occasionally is to determine the existence of fluid in the abdomen.

*Treatment of ascites.*—This must depend, as in other dropsies, upon the organ affected, and upon the extent and nature of the disease. With respect to tapping, it should be avoided as long as possible. We should be guided chiefly by the sufferings produced by the distension, as well as by the difficulty of breathing. I have been frequently on the point of directing the operation to be performed, when absorption commenced, and afterwards went on rapidly; and, on the other hand, I never once had occasion to regret delay. The same objection to the operation may be made, as was formerly urged, when considering ovarian diseases, that when once we begin to tap, we cannot leave off, as the effusion subsequently takes place with greater rapidity. Counter-irritation has appeared to me to be more serviceable in ascites than in some other forms of dropsy.





## CONTENTS

---

### PART I.—GENERAL HISTORY OF INFLAMMATION AND FEVER— WITH THE PATHOLOGY AND TREATMENT OF INDIVIDUAL FEVERS.

	PAGE
CHAP. I.—DOCTRINES, CAUSES, PHENOMENA, AND EFFECTS OF INFLAMMATION	9
General Doctrines which have prevailed respecting inflammation	9
Causes of Inflammation	15
Division of Inflammation into varieties	17
Phenomena of Inflammation	17
Terminations of Inflammation, with a short account of the Effects of Inflammation on the principal Tissues	19
CHAP. II.—FEVERS	24
History of the General Doctrines of Fever	24
Division of Fevers	31
General Description of the Phenomena of Fevers	32
Causes of Fever	37
CHAP. III.—INTERMITTENT FEVER	49
Phenomena of Intermittents	50
Appearances found on Dissection	52
Causes of Intermittents	63
Pathology of Intermittents	63
Treatment of Intermittents	66
CHAP. IV.—REMITTENT OR YELLOW FEVER	98
Symptoms	99
Appearances found on Dissection	101
Causes	102
Treatment	103
Infantile Remittent	107
Causes	108
Appearances on Dissection	108
Pathology	109
Treatment	109
CHAP. V.—CONTINUED FEVER	110
Fever from Functional Derangement	112
Treatment	113
Fever from Inflammation	114
Symptoms of Inflammatory Fever	114
Treatment of Inflammatory Fever	117

	PAGE
Congestive Fever - - - - -	119
Symptoms of Congestive Fever - - - - -	120
Pathology of Congestive Fever - - - - -	121
Treatment of Congestive Fever - - - - -	122
Mixed Form of Fever - - - - -	123
Hectic Fever - - - - -	128
Symptoms - - - - -	128
Treatment - - - - -	129
General Pathology of Eruptive Fevers - - - - -	129
Scarlet Fever - - - - -	135
Symptoms - - - - -	135
Appearances on Dissection - - - - -	137
Treatment - - - - -	138
Measles - - - - -	140
Appearances on Dissection - - - - -	144
Treatment - - - - -	145
Small Pox - - - - -	146
Appearances on Dissection - - - - -	147
Treatment - - - - -	148
Modified Small Pox - - - - -	149
Chicken-pox - - - - -	150
Miliary Fever - - - - -	151
Treatment - - - - -	152
Roseola - - - - -	152
Urticaria - - - - -	152
The Plague - - - - -	153
Treatment - - - - -	155

## PART II.—DISEASES OF THE ORGANS CONNECTED WITH THE DIGESTIVE SYSTEM.

CHAP. I.—DIFFICULT DENTITION - - - - -	159
CHAP. II.—DIFFICULT DEGLUTITION FROM INFLAMMATION, ULCERATION, AND ENLARGEMENT OF THE TONGUE; CYNANCHE TONSILLARIS; CYNANCHE PHARYNGEA; INFLAMMATION AND ULCERATION OF THE ŒSOPHAGUS - - - - -	163
Cynanche Tonsillaris - - - - -	164
Treatment - - - - -	165
Inflammation on the Pharynx - - - - -	166
Inflammation and Ulceration of the Œsophagus - - - - -	166
Treatment - - - - -	167
Chronic Affections of the Œsophagus - - - - -	167
CHAP. III.—INDIGESTION - - - - -	168
Flatulency and Tympanitis - - - - -	172
Pyrosis or Water-brash - - - - -	172
Heart-burn - - - - -	173
Gastrodynia - - - - -	173
Symptoms - - - - -	173
CHAP. IV.—DISCHARGES OF BLOOD FROM THE STOMACH AND BOWELS - - - - -	175
1. Hæmorrhage from the Stomach - - - - -	175
Treatment - - - - -	176
2. Hæmorrhage from the Bowels - - - - -	176
Symptoms - - - - -	177

	PAGE
Causes - - - - -	177
Treatment - - - - -	177
Piles - - - - -	176
CHAP. V.—COMMON COLIC; PAINTER'S COLIC; ILEOUS; INTUS-SUSCEPTION; INTESTINAL CONCRETIONS; PROLAPSUS ANI; AND CONSTRICTION OF THE RECTUM - - - - -	179
Common Colic - - - - -	179
Symptoms - - - - -	179
Treatment - - - - -	179
Painter's Colic - - - - -	180
Symptoms - - - - -	180
Appearances on Dissection - - - - -	181
Treatment - - - - -	181
Ileus - - - - -	182
Appearances on Dissection, and Pathological Remarks - - - - -	183
Treatment - - - - -	185
Intus-Susception - - - - -	186
Appearances on Dissection - - - - -	186
Treatment - - - - -	186
Intestinal Concretions - - - - -	187
Treatment - - - - -	187
Prolapsus Ani - - - - -	187
Treatment - - - - -	188
Constriction of the Rectum - - - - -	188
CHAP. VI.—INTESTINAL WORMS - - - - -	189
Treatment - - - - -	190
CHAP. VII.—INFLAMMATORY AFFECTIONS OF THE ORGANS CONTAINED WITHIN THE CAVITY OF THE ABDOMEN - - - - -	191
General Remarks on Inflammation - - - - -	191
Enteritic Inflammation - - - - -	193
Peritonitis - - - - -	194
Symptoms - - - - -	194
Cases - - - - -	195
Pathology - - - - -	195
Treatment - - - - -	195
Puerperal Peritonitis, vulgarly called Puerperal Fever - - - - -	196
Symptoms - - - - -	196
Appearances on Dissection - - - - -	198
Pathological Remarks - - - - -	198
Treatment - - - - -	200
Comparative Results of do. - - - - -	202
Chronic Peritonitis - - - - -	203
Causes - - - - -	204
Appearances on Dissection - - - - -	204
Treatment - - - - -	205
General Remarks on Inflammation of the Mucous Membrane of the Stomach and Bowels - - - - -	206
Inflammation of the Mucous Membrane of the Stomach - - - - -	213
Causes - - - - -	214
Appearances on Dissection - - - - -	214
Treatment - - - - -	214



	PAGE
Inflammation of the Mucous Membrane of the Bowels - - - - -	215
Treatment - - - - -	216
Chronic Inflammation of the Mucous Membrane - - - - -	216
Treatment - - - - -	217
Diarrhœa - - - - -	217
Pathology - - - - -	217
Treatment - - - - -	217
Bowel Complaints of Children - - - - -	218
Treatment - - - - -	220
Tabes Mensenterica - - - - -	221
Appearances on Dissection - - - - -	222
Treatment - - - - -	222
Dysentery - - - - -	222
Symptoms of Acute Dysentery - - - - -	222
Symptoms of Chronic Dysentery - - - - -	224
Appearances on Dissection, with Pathological Remarks - - - - -	224
Causes - - - - -	228
Treatment - - - - -	228
1st, Treatment as it occurs in this country - - - - -	229
2d, Treatment as it occurs in warm climates - - - - -	230
Treatment of Chronic Dysentery - - - - -	232
Cholera - - - - -	232
Causes - - - - -	233
Phenomena - - - - -	233
Appearances on Dissection - - - - -	235
Pathological Remarks - - - - -	237
Treatment - - - - -	238
Inflammation of the Muscular and Cellular Tissues - - - - -	241
Scirrhus of Stomach and Intestines - - - - -	243
Symptoms of Cancer in the Stomach, &c. - - - - -	244
Causes - - - - -	245
Treatment - - - - -	246
CHAP. VIII.—DISEASES OF THE LIVER AND SPLEEN - - - - -	247
Inflammation of the Liver - - - - -	247
Symptoms of acute Hepatitis - - - - -	248
Symptoms of Chronic Hepatitis - - - - -	248
Appearances on Dissection - - - - -	249
Causes - - - - -	250
Treatment - - - - -	250
Iaundice - - - - -	252
Phenomena - - - - -	252
Treatment - - - - -	253
Gall-Stones - - - - -	253
Treatment - - - - -	253
Splenitis - - - - -	254
Inflammation of the Spleen - - - - -	254
Treatment - - - - -	254

PART III.—DISEASES OF THE ORGANS CONNECTED WITH THE RES- PIRATORY SYSTEM - - - - -	258
---	-----

CHAP. I.—GENERAL REMARKS - - - - -	258
------------------------------------	-----

	PAGE
CHAP. II.—DISEASES AFFECTING THE MUCOUS MEMBRANE OF THE AIR-PAS-	
SAGES - - - - -	264
Catarrh - - - - -	264
Treatment - - - - -	265
Bronchitis - - - - -	265
Chronic Bronchitis - - - - -	268
Stethoscopic Signs of Acute and Chronic Bronchitis - - - - -	269
Appearances on Dissection, and Pathological Remarks - - - - -	270
Treatment of Acute Bronchitis - - - - -	272
Treatment of Chronic Bronchitis - - - - -	275
Inflammation of the Larynx - - - - -	276
Croup - - - - -	277
Phenomena - - - - -	277
Causes - - - - -	278
Appearances on Dissection - - - - -	278
Pathological Remarks - - - - -	279
Symptoms - - - - -	279
Treatment - - - - -	283
Hooping Cough - - - - -	285
Phenomena - - - - -	285
Appearances on Dissection - - - - -	287
Pathological Remarks - - - - -	289
Treatment - - - - -	292
CHAP. III.—PNEUMONIA - - - - -	297
Phenomena - - - - -	297
Appearances on Dissection - - - - -	299
Treatment - - - - -	300
CHAP. IV.—PLEURITIS - - - - -	304
Stethoscopic Signs - - - - -	305
Appearances on Dissection - - - - -	305
Treatment - - - - -	306
Chronic Pleuritis - - - - -	307
Empyema - - - - -	307
Stethoscopic Signs - - - - -	307
Treatment - - - - -	307
CHAP. V.—HÆMOPTYSIS - - - - -	309
Appearances on Dissection of first variety - - - - -	310
Treatment of first variety - - - - -	310
Symptoms of second variety - - - - -	310
Appearances on Dissection of second variety - - - - -	310
Treatment of second variety - - - - -	313
CHAP. VI.—PHTHISIS PULMONALIS - - - - -	315
Phenomena - - - - -	315
Appearances on Dissection - - - - -	316
Treatment - - - - -	322
Description of more rare structural derangements found in the lungs, viz., bodies of a cartilaginous, bony, calculous, and chalky nature - - - - -	323
Melanosis of the Lungs - - - - -	324
Medullary Sarcoma of the Lungs - - - - -	326
CHAP. VII.—ASTHMA - - - - -	330
Phenomena - - - - -	331

	PAGE
Causes - - - - -	331
Pathology - - - - -	331
Treatment - - - - -	333
PART IV.—DISEASES OF THE CIRCULATING SYSTEM.	
CHAP. I.—GENERAL REMARKS - - - - -	339
CHAP. II.—PALPITATION, &c. - - - - -	347
Treatment - - - - -	348
Angina Pectoris - - - - -	349
Appearances on Dissection, and Pathological Remarks - - - - -	351
Treatment - - - - -	352
CHAP. III.—PERICARDITIS AND CARDITIS - - - - -	354
Causes - - - - -	357
Appearances on Dissection - - - - -	357
Treatment - - - - -	358
Carditis - - - - -	359
Appearances on Dissection - - - - -	359
Treatment - - - - -	360
CHAP. IV.—HYPERTROPHY OF THE HEART - - - - -	361
Stethoscopic Signs of Hypertrophy of the Left Ventricle - - - - -	362
Stethoscopic Signs of Hypertrophy of the Right Ventricle - - - - -	363
Treatment of Hypertrophy of the Heart - - - - -	363
CHAP. V.—DILATATION OF THE HEART - - - - -	366
Symptoms - - - - -	366
Stethoscopic Signs of Dilatation of Right Ventricle - - - - -	369
Stethoscopic Signs of Dilatation of Left Ventricle - - - - -	370
Tuberculous Formation - - - - -	370
Atrophy of the Heart - - - - -	371
Rupture of the Heart - - - - -	372
CHAP. VI.—DISEASES OF THE VALVES - - - - -	374
Appearances on Dissection - - - - -	374
Symptoms - - - - -	375
Stethoscopic Signs of Diseases of the Valves - - - - -	375
Treatment - - - - -	376
CHAP. VII.—DISEASES OF THE BLOOD-VESSELS - - - - -	377
On Dissection - - - - -	378
Ossification of the Arteries - - - - -	379
Aneurism - - - - -	380
Treatment - - - - -	382
Inflammation of Veins - - - - -	383
Symptoms - - - - -	383
Phlegmasia Dolens - - - - -	384
Symptoms - - - - -	384
Pathological Observations - - - - -	385
Treatment - - - - -	387
CHAP. VIII.—PLETHORA AND EXSANGUINITY - - - - -	388
Plethora - - - - -	388
Causes - - - - -	388
Treatment - - - - -	389
Exsanguinity - - - - -	389
Treatment - - - - -	391





	PAGE
Symptoms - - - - -	451
Causes - - - - -	452
Treatment - - - - -	453
Chorea - - - - -	453
Causes - - - - -	454
Treatment - - - - -	454
Neuralgic Pains - - - - -	455
Causes - - - - -	455
Treatment - - - - -	455
CHAP. V.—APOPLEXY AND PARALYSIS - - - - -	457
Apoplexy - - - - -	457
Symptoms - - - - -	457
Causes - - - - -	459
Appearances on Dissection - - - - -	459
Treatment - - - - -	461
Paralysis - - - - -	461
Symptoms - - - - -	462
Causes - - - - -	463
Treatment - - - - -	463
CHAP. VI.—INSANITY—HYPOCHRONDRIASIS—AND DELIRIUM TREMENS - - - - -	466
Insanity - - - - -	466
Causes - - - - -	468
Appearances on Dissection - - - - -	469
Treatment - - - - -	471
Hypochondriasis - - - - -	475
Causes - - - - -	476
Treatment - - - - -	476
Delirium Tremens - - - - -	477
PART VI.—DISEASES OF THE EYE AND EAR - - - - -	480
CHAP. I.—GENERAL REMARKS ON DISEASES OF THE EYE - - - - -	481
Symptoms of Ophthalmic Inflammation - - - - -	482
Causes of Ophthalmic Inflammation - - - - -	483
Treatment of Ophthalmic Inflammation - - - - -	484
CHAP. II.—INFLAMMATION OF THE CONJUNCTIVA - - - - -	489
Simple Inflammation of the external covering of the Eye - - - - -	489
Symptoms - - - - -	489
Treatment - - - - -	490
Simple Catarrhal Ophthalmia - - - - -	490
Symptoms - - - - -	491
Treatment - - - - -	491
Purulent Ophthalmia of Infants - - - - -	492
Symptoms - - - - -	493
Causes - - - - -	494
Treatment - - - - -	495
Pustular Ophthalmia - - - - -	498
Treatment - - - - -	498
CHAP. III.—INFLAMMATION OF THE EYE-BALL - - - - -	499
Inflammation of the Sclerotic Coat - - - - -	499
Inflammation of the Iris - - - - -	499
Causes - - - - -	501
Treatment - - - - -	501

	PAGE
Amaurosis - - - - -	503
Causes - - - - -	503
Symptoms - - - - -	503
Treatment - - - - -	504
CHAP. IV.—DISEASES OF THE EAR - - - - -	506
Otitis - - - - -	506
Causes - - - - -	507
Treatment - - - - -	507
Otorrhæa - - - - -	508
PART VII.—DISEASES OF THE SKIN, - - - - -	509
CHAP. I.—GENERAL REMARKS ON DISEASES OF THE SKIN - - - - -	511
Classification of Diseases of the Skin - - - - -	513
CHAP. II.—ERYSIPELAS - - - - -	514
Symptoms - - - - -	514
Causes - - - - -	516
Appearances on Dissection - - - - -	518
Pathological Remarks - - - - -	519
Treatment - - - - -	519
CHAP. III.—PAPULAR DISEASES - - - - -	534
Strofulous - - - - -	534
Treatment - - - - -	534
Lichen - - - - -	535
Treatment - - - - -	535
Prurigo - - - - -	535
Treatment - - - - -	535
CHAP. IV.—PUSTULAR DISEASES - - - - -	537
Impetigo - - - - -	537
Causes - - - - -	537
Treatment - - - - -	538
Porrigo - - - - -	538
Treatment - - - - -	538
Scabies, or Itch - - - - -	541
Causes - - - - -	541
Treatment - - - - -	541
Ecthyma and Rupia - - - - -	541
Causes - - - - -	541
Pathology - - - - -	541
Treatment - - - - -	541
Acne - - - - -	541
Causes - - - - -	541
Treatment - - - - -	541
Sycosis - - - - -	541
Treatment - - - - -	541
CHAP. V.—SQUAMOUS DISEASES - - - - -	541
Lepra - - - - -	541
Causes - - - - -	541
Treatment - - - - -	541
Psoriasis - - - - -	541
Treatment - - - - -	541
Pityriasis - - - - -	541
Causes - - - - -	541

	PAGE
Treatment - - - - -	553
CHAP. VI.—VESICULAR DISEASES - - - - -	555
Herbes - - - - -	555
Causes - - - - -	556
Treatment - - - - -	556
Pemphigus and Pompholyx - - - - -	557
CHAP. VII.—PURPURA - - - - -	558
Causes - - - - -	565
Appearances on Dissection - - - - -	566
Pathology - - - - -	568
Treatment - - - - -	569
Exudation of Blood from the Surface, without Abrasion of the Cuticle, commonly called "Bloody Sweat" - - - - -	571
PART VIII.—DISEASES OF THE URINARY AND GENITAL ORGANS - - - - -	573
CHAP. I.—INFLAMMATION OF THE URETHRA, BLADDER, AND KIDNEYS - - - - -	575
Inflammation of the Urethra - - - - -	575
Symptoms - - - - -	575
Appearances on Dissection - - - - -	577
Treatment - - - - -	577
Inflammation of the Mucous Membrane of the Bladder - - - - -	580
Causes - - - - -	580
Treatment - - - - -	580
Inflammation of the Kidney - - - - -	581
Symptoms - - - - -	581
Treatment - - - - -	582
CHAP. II.—CALCULUS IN KIDNEYS, BLADDER, AND OTHER PARTS OF THE URINARY PASSAGES - - - - -	583
Calculus in the Kidney - - - - -	585
Symptoms - - - - -	585
Treatment - - - - -	586
Calculus in the Bladder - - - - -	586
Symptoms - - - - -	587
Treatment - - - - -	587
Calculus in the Urethra - - - - -	588
Calculus embedded in the Prostate - - - - -	588
CHAP. III.—SUPPRESSION OF URINE, RETENTION OF URINE, INCONTINENCE OF URINE - - - - -	589
Suppression of Urine - - - - -	589
Treatment - - - - -	591
Retention of Urine - - - - -	592
Treatment - - - - -	593
Incontinence of Urine - - - - -	593
CHAP. IV.—HÆMATURIA, OR DISCHARGE OF BLOOD FROM THE URINARY PASSAGES - - - - -	595
Treatment - - - - -	595
CHAP. V.—DIABETES - - - - -	597
Symptoms - - - - -	598
Appearances on Dissection - - - - -	599
Causes - - - - -	599
Pathology - - - - -	600
Treatment - - - - -	602

	PAGE
CHAP. VI.—SYPHILIS	605
Symptoms	605
Treatment	607
CHAP. VII.—DISEASES OF THE LABIA, AND EXTERNAL PARTS IN THE FEMALE	615
Phlegmon	615
Symptoms	615
Treatment	615
Peculiar Affection of the Pudendum, occurring in Young Subjects	615
Treatment	618
CHAP. VIII.—INFLAMMATION OF THE TESTES	619
Treatment	619
CHAP. IX.—DISEASES OF THE UTERUS, CONNECTED WITH INFLAMMATORY ACTION	620
Inflammation of the Uterus after Delivery	621
Inflammation of the Os and Cervix Uteri in the ordinary state of the System	623
Treatment	624
Vascular Sarcoma of the Uterus	625
Treatment	626
Scirrhus and Cancer of the Uterus	627
Treatment	628
CHAP. X.—PROLAPSUS OF THE UTERUS—RETROVERSION OF THE UTERUS—POLYPUS OF THE VAGINA AND UTERUS	630
Prolapsus of the Uterus	630
Causes	630
Treatment	630
Retroversion of the Uterus	631
Causes	631
Treatment	631
Polypous Tumours of the Vagina and Uterus	632
Treatment	634
CHAP. XI.—TUBERCLES OF THE UTERUS—BONY CONCRETIONS—HYDATIDS—AQUEOUS AND FLATULENT DISCHARGES	635
Tubercles of the Uterus	635
Treatment	636
Bony Concretion	636
Treatment	637
Hydatids	637
Aqueous and Flatulent Discharges	638
CHAP. XII.—FLUOR ALBUS AND LEUCORRŒA	639
Symptoms	639
Causes	640
Treatment	640
CHAP. XIII.—DISEASES OF MENSTRUATION	643
Amenorrhœa	643
Retention of the Menses	643
Causes	644
Treatment	644
Suppression of the Menses	649
Treatment	649
Dysmenorrhœa, or Painful and Difficult Menstruation	650



	PAGE
Pathological Remarks - - - - -	652
Treatment - - - - -	654
Immoderate Flow of the Menses - - - - -	656
Treatment - - - - -	656
Menorrhagia - - - - -	656
Causes - - - - -	657
Treatment - - - - -	657
Cessation of the Menses - - - - -	662
Treatment - - - - -	663
CHAP. XIV.—DISEASES OF THE OVARIA - - - - -	664
Symptoms - - - - -	665
Treatment - - - - -	667
PART IX.—GOUT—RHEUMATISM—SCROFULA—DROPSY - - - - -	673
CHAP. I.—GOUT - - - - -	675
Phenomena of a Paroxysm of Regular Gout - - - - -	676
Phenomena of Chronic Gout - - - - -	681
Phenomena of Retrocedent Gout - - - - -	682
Causes of Gout, and Pathological Observations - - - - -	685
Treatment - - - - -	689
Management of Gouty Subjects during the intervals - - - - -	693
CHAP. II.—RHEUMATISM - - - - -	696
Acute Rheumatism - - - - -	696
Symptoms - - - - -	696
Treatment - - - - -	698
Chronic Rheumatism - - - - -	701
Rheumatic Gout - - - - -	702
CHAP. III.—SCROFULA - - - - -	703
Treatment - - - - -	707
CHAP. IV.—DROPSY - - - - -	712
General Remarks - - - - -	712
Anasarca - - - - -	729
Treatment - - - - -	729
Hydrothorax - - - - -	729
Stethoscopic Signs - - - - -	730
Treatment - - - - -	730
Ascites - - - - -	730
Treatment - - - - -	731







JUN 7 1966  
Health Service



NATIONAL LIBRARY OF MEDICINE



NLM 04142891 6